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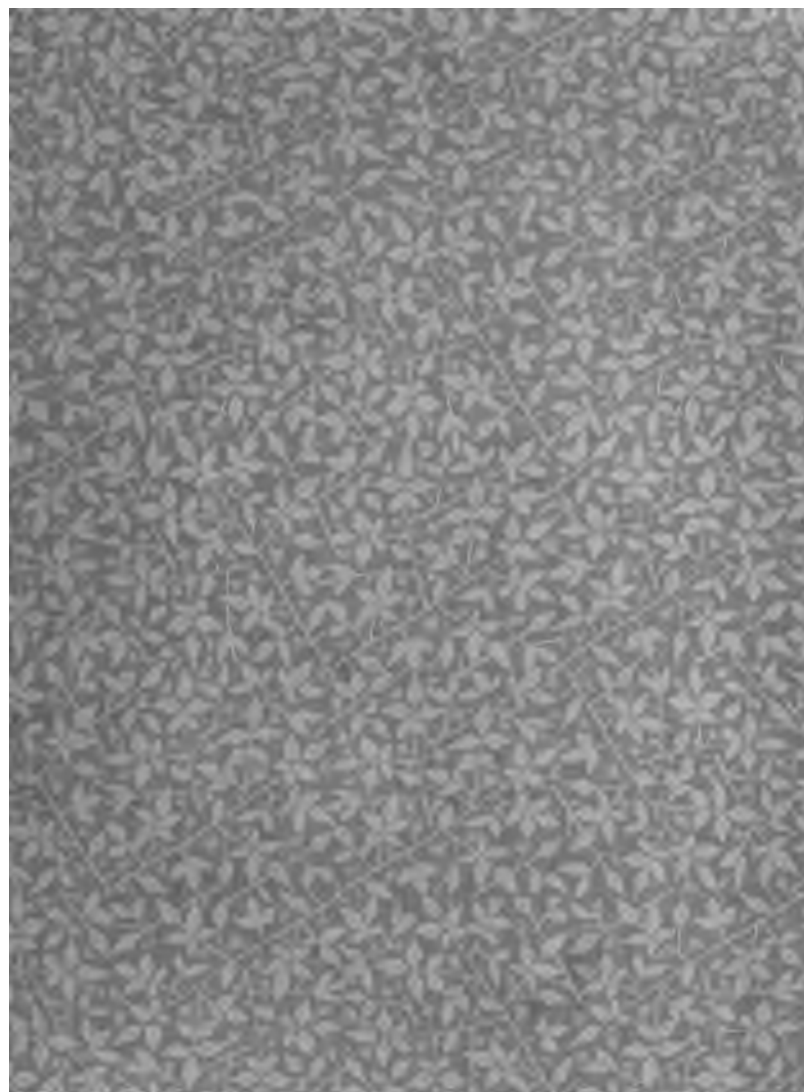
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IN THE
POLAR REGIONS



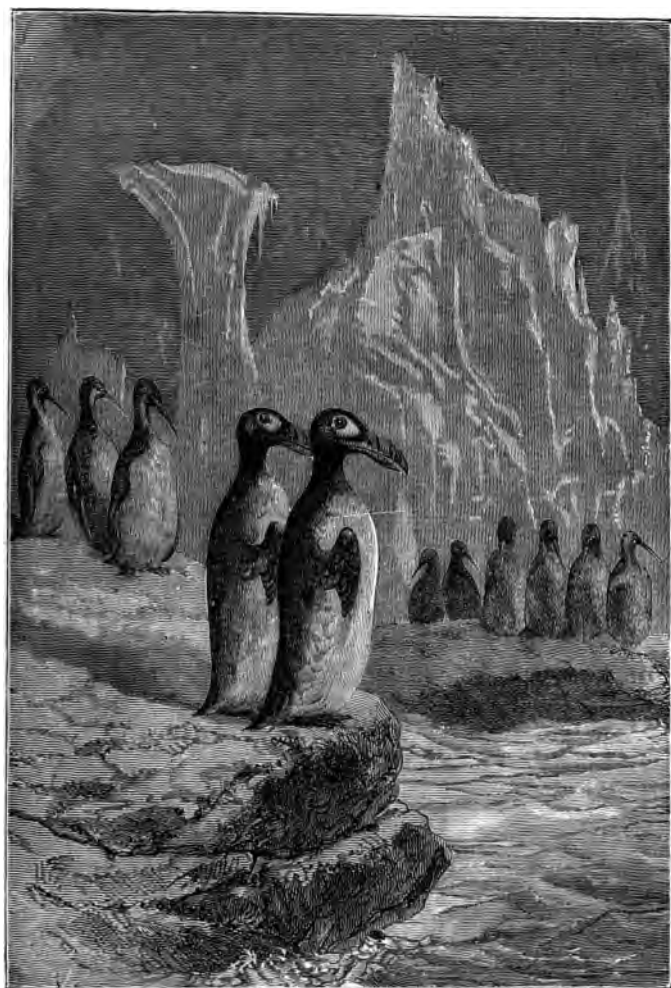
THE POLAR BEAR

THE
NATURE & NATURAL HISTORY
IN THE FRIGID ZONES





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BIRDS OF POLAR REGIONS-AUKS AND PENGUINS.

IN THE
POLAR REGIONS;

OR,

NATURE AND NATURAL HISTORY IN THE
FROZEN ZONE.

With Anecdotes and Stories of Adventure and Travel.



London:

T. NELSON AND SONS, PATERNOSTER ROW.
EDINBURGH; AND NEW YORK.

1882.

203. g. 458.

List of Illustrations.

BIRDS OF POLAR REGIONS—AUKS AND PENGUINS, ...	<i>Frontispiece</i>
AN ARCTIC SUMMER-SCENE, ...	13
ESKIMOS, ...	16
POLAR BEARS, ...	25
THE BEAR AND HER CUBS, ...	30
AN UNWELCOME VISITOR, ...	36
BEARS BREAKING INTO A CACHE, ...	38
ESKIMO DOGS, ...	40
ESKIMO SLEDGE AND TEAM, ...	47
THE REINDEER IN LAPLAND, ...	51
CARIBOO, OR AMERICAN REINDEER, ...	55
ARCTIC FOXES, ...	60
WOLF-HUNT IN THE NORTH OF EUROPE, ...	67
THE MUSK OX, ...	73
THE SABLE, ...	78
THE ERMINE, OR STOAT, ...	81
THE WOLVERINE, OR GLUTTON, ...	84
THE SEA-OTTER, ...	91
THE GREENLAND WHALE, ...	97
HAND-HARPOON, ...	112
GUN-HARPOONS, ...	113
THE NARWHAL—MALE AND FEMALE, ...	121
THE PORPOISE, ...	124
ESKIMO SEAL-HUNTERS, ...	128
KANE'S PARTY AND THE SEAL, ...	133
SEALS ON THE ICE-PACK, ...	157
A SEAL-HUNT, ...	141

THE CRESTED SEAL,	144
GROUP OF WALRUS,	153
BOAT ATTACKED BY WALRUS,	157
ESKIMO BOY CATCHING AUKE,	167
THE GREAT AUKE, PUFFIN, AND RAZORBILLS,	169
THE GREAT NORTHERN DIVER,	171
THE FULMAR PETREL,	172
THE COMMON SEA-GULL,	176
EIDER-DUCKS,	178
PUFFINS, OR COULTERNEBS,	180
THE SNOWY OWL,	186
BALD EAGLE AND FISH-HAWK,	189
AN ICELANDIC LANDSCAPE,	193
THE PTARMIGAN,	197
TRAVELLING IN THE STEPPES OF SIBERIA,	201
A SAMOEDE FAMILY,	204
FISHER LAPPS,	209
MOUNT EREBUS,	219
GROUP OF PENGUINS,	230

IN THE POLAR REGIONS.

AMERICA—ASIA—EUROPE.



THE gloomy regions of the extreme North present a singular spectacle to the eye of the European traveller. For the greater part of the year the Polar World is wrapped in a darkness which only the midnight sun or the glorious lights of the aurora illuminate. The shores are girt with everlasting ice, and the white snow lies deep on hill and plain. For leagues upon leagues the ice-fields cover the silent seas; and immense glaciers, or rivers of solid ice, fill up the valleys and stretch down to the very margin of ocean. There they break up into huge fragments, which the currents gradually carry away and strand on some distant coast, or bear southward into the open waters. No blooming vegetation relieves the desolate landscape; a flower here and there partly conceals its modest beauties under a mantle of snow, but its bloom is faint and its life

brief. Often the whole scene is wrapped in a chill thick mist, through which it is impossible for the eye to penetrate ; or the fierce winds rage over the icy plain, driving before them clouds of snow. The air is so cold that man dares not expose himself unprotected to its influence ; oil freezes, milk freezes, even brandy freezes ; the few inhabitants of the dreary land fold themselves in their bear-skins, and shut themselves up in their huts, every chink of which they carefully close against the frost, yet the interior soon becomes lined with a thick crust of ice, and the provisions are often frozen so hard that they can be cut only by a hatchet.

As early as August the snow falls, and before the month of October the frozen ground is everywhere covered to the depth of two or three feet. The sun sinks lower every day, until at last only a few straggling rays reach the saddened world. All along the shores of bay and gulf and inlet creeps a girdle of solid ice. The cold increases, and the air deposits its moisture in the form of a fog which freezes into a kind of network of tiny icicles, dispersed through the atmosphere, and as painful to the human skin as a multitude of diminutive lancets. Wherever a vantage-point can be found, the hoar-frost groups its fantastic clustering crystals. The surface of the sea sends up a cloud of vapour—the *frost-smoke*, as it is called ; a proof that as yet the water is somewhat *warmer* than the external air. But gradually this far-spreading haze disperses ; the atmosphere grows transparently clear ; it is evident that the sea has thrown off its store of heat ; and even a sheet of ice steals over the vast expanse, increasing as

much as an inch in thickness in the course of a single night.

Daylight at last vanishes, and the darkness of the long Arctic winter descends upon the torpid world ; all nature seems benumbed in a death-sleep, except when the moonlight occasionally awakens it with silvery rays, or terrible gales disturb the silence, or the distant rocks rend apart with loud explosions. Heavy showers of snow confuse all external objects under one tremendous shroud ; the ice grows thicker, the frost keener ; the Polar bear seeks its remote cavern, and the seal retires to some more genial shore.

After long months of darkness, at length the first rays of the returning sun are seen above the horizon, and it is allowable once more to hope. By degrees the air grows sensibly warmer ; the frost is arrested ; the winds hush their violence ; and in the month of May the wan prisoner quits his hut in search of fish on the margin of the sea. Higher rises the sun, and as he rises his genial power increases. The snows melt rapidly before his beams, and the scanty Arctic vegetation appears in sheltered hollows, — mosses, lichens, dwarf-willows, and a few berry-bearing bushes. The thick crust of ice dissolves, and huge fragments, splintering from the cliffs, fall headlong into the sea or on the shore with a tremendous crash. The ocean is freed from its chains, and the icy dome which covered it breaks up into “floes” and drifting isles. These are again broken up, and dashing against one another with violence are frequently accumulated in colossal piles, against which the waters rage with incessant fury.

Before the end of June, however, the Arctic valleys exhibit the bloom of verdure, and the ocean-ways are opened up to the daring navigator. The increasing warmth produces a continual moisture, and thus the surface of the sea is constantly overhung by a cloud of mist and vapour: this circumstance is due to the fact that the waters are *colder* than the external air. But gradually they recover their former warmth, the fogs disappear, the sun pours forth an unclouded radiance, and the brief Arctic summer reigns over land and sea.

At such a time the gloomy regions of the North lose their aspect of desolation, and assume even a strange and wonderful beauty. The sun never sinks entirely below the horizon, and there is scarcely any night. Often the great white sea is smooth as glass; not a ripple disturbs its calm; not a breath of air is stirring. Green hills and clumps of willows contrast pleasantly with the bleak distant mountains and the gigantic icebergs which lie all around, bathed in an atmosphere of gold and silver and purple. A traveller speaks of the summer sky of the Polar World as not less bright or soft or inspiring than the skies of Italy. He speaks of the floating islands of ice as wholly losing their chilly appearance, and glittering in the glow of the brilliant heavens like masses of burnished metal or solid flame. The sea shines of a deep emerald-green; and the charm of the picture is increased by the thousands of tiny cascades which leap from the sides of these colossal bergs, and, as they fall, are touched with all the hues of the rainbow.

The sweet influence of the summer wakes the bear from



AN ARCTIC SUMMER-SCENE.

his long winter-sleep ; the seals come forth from the deep waters, and bask in the sun on the slopes of the floes and banks of ice ; the Arctic fox prowls among the valleys ; the Eskimo with his team of dogs starts in pursuit of the reindeer, or embarks in his kayak, or canoe, to hunt the narwhal and the walrus ; legions of sea-birds arrive from the southward, and build their rude nests on the ledges of

the cliffs and projecting headlands : all Nature breaks out into life, motion, and activity.

Then the summer passes into autumn, and before long the terrible winter once more asserts its power. Thus, year after year, the cycle of change is complete ; but it is only for a few short months that the European can navigate the far-off channels of the Arctic seas.

Even the Arctic night, however, is not without a beauty and a magnificence of its own. Much that is sublime, much that is lovely, may be found in the marvellous displays of the aurora ; in the play of the moonlight on the snow-shrouded hills ; in the keenness of the starlight, which seems to pierce the air like the flash of a spear ; in the broad expanse of the ice-fields, with their almost endless ranges of "hummocks," or knolls ; and in the lofty grandeur of the mountains and the glaciers.

Out of the glassy sea, says an eloquent writer, the cliffs rear their dark fronts and frown grimly over the wilderness of ice-clad waters. The mountain-peaks, shining brightly in the clear, cold atmosphere, seem to pierce the very heavens, their heads heavy with the burden of unnumbered winters. The glaciers, those rivers of solid ice, pursue their slow but regular march towards the sea in floods of "measureless magnitude." But underneath the starry robe of night there is no warmth and no colouring. No "broad window" opens in the east to show forth the glory of the sun ; and no gold and crimson curtain falls in the west on a world clothed in blue and green and purple, and lighted up with the sunset splendours. In the shadow of the deep long winter night Nature needs no drapery,

requires no adornment; she is content with the majesty of the ice-bound sea, the huge glacier, the frowning cliff, and the lofty mountain.

The Arctic regions of North America are inhabited by an uncivilized people called the Eskimos. Encamped in summer under tents made of the skin of the seal or the reindeer, hidden in winter in their huts of frozen snow, they are to be found from Behring Strait, which divides America from Asia, to Cape Farewell, the southern extremity of Greenland. Their complexion is of a reddish-brown. They are small of stature, an Eskimo five feet nine inches high being regarded by his companions as a giant! In body they are thick or "squat," but their hands and feet are small, their fingers short. Handsome they are not, except in their own conceit; at least, a broad flat face, and a small deep-sunken nose, with high cheek-bones and a large mouth, do not constitute the European ideal of beauty! Yet there is something agreeable in their ugliness, owing to their frank and good-humoured expression. Their skin has an oily feel, and is cold to the touch, and their flesh is soft and flabby, owing probably to the fat animal substances which form so large a part of their food.

The severity of the climate under which they live has compelled them to pay considerable attention to dress, and though their costume is not graceful, it is very warm and comfortable.

The men wear a kind of double coat of deer-skin: the hair of the inner is turned towards the skin, so as to



ESKIMOS.

increase the warmth; the outer rises in a capacious hood over the wearer's head. The breeches are of the same material, and also double. They reach down to and hang

over the boots, which extend to the knees, and are made of deer-skin or the hide of the seal and walrus, according as they are intended for in-door or out-door use.

The dress of the women comprises the same articles, but is differently shaped. Their boots, moreover, are much larger than those of the men; each, indeed, is large enough to hold a baby; and the consequence is that they move about in the most awkward fashion, waddling like a duck!

Both men and women are very fond of finery. They sew their clothes with threads made from the sinews of animals; and for the sake of embellishment they arrange their rich furs in stripes of various colours, with fringes along the borders. Their necklaces and girdles are composed of coloured beads, or, in their stead, of the teeth of the fox, wolf, or musk-ox. As a further ornament they paint their skin; not by tattooing, as is customary among the Pacific Islanders, but by drawing under the skin a needle with a thread dipped in lamp-black and oil. When this is drawn out, the wounded part is subjected to pressure, and the result is a permanent olive tint. In this way they cover the face, arms, thighs, and chest with rudely-designed figures.

The food of the Eskimos is chiefly animal, for the desolate regions they inhabit afford them little choice of herb or root. Their principal supplies are obtained by hunting the wild animals which frequent the icy seas and frozen shores. Their success in the chase is marvellous, if we consider the rudeness of the weapons at their disposal. Wood and iron being very scarce, they resort to bone, with which they tip *their spears and arrows*; *their cord or*

line is formed by cutting the toughest and most elastic skins into long strips. Thus equipped, they hunt the reindeer and the fox, the seal, the walrus, and the whale, the eider and other ducks, and the thousands of ocean-birds which haunt the sea-shore during the Arctic summer.

Like all peoples whose supply of food is precarious, they possess a voracious appetite. As soon as a seal or walrus is captured, the good news spreads throughout the little community, and on its arrival the prey is instantly cut up; the lamps are supplied with oil, and quickly lighted; all the pots are filled with flesh, and preparations made for a general banquet. When all is ready, one man selects a large and savoury slice, applies it to his teeth, and tears away as much as his capacious mouth will hold; then he hands it to his next neighbour, and he passes it on to a third, and the third to a fourth, until all is gone. Then another slice is taken, and the process recommences; nor does the feast terminate until the animal is entirely devoured. The capacity of an Eskimo stomach is something monstrous! It is told of a youth named Toolooak, that in twenty-one hours he supplied himself with ten pounds four ounces of solid food, a gallon and a pint of water, and a pint of soup.

Cleanliness is a thing unknown among the Eskimos; and for this they have a much better excuse than have the mass of slovenly people, water being nearly as scarce with them as it is in the hot deserts of southern climes. Every drop at certain seasons is obtained from snow by the necessarily slow and, to those poor people, expensive process of melting over a lamp. They have thus considerable

difficulty in obtaining a sufficient supply of water to assuage their thirst—the use of snow directly for this purpose being, according to Kane, the reverse of efficacious, as in his own experience “it burnt like caustic ;” consequently none of the precious fluid is used in the cleansing of the persons, the clothing, or the houses of the Eskimos. The houses, when composed of snow, as they always are in winter, are extremely clean when newly built ; but from the smoke of the lamps, and the oily nature of the food, these are rendered offensive both to sight and smell long before the welcome heat of spring comes and wipes them wholly out. Fire does not seem to be so necessary to the Eskimos as, judging simply from the rigour of the climate, one might suppose it to be. Their lamps are kept burning, not so much for the warmth they give—for in snow-houses a warm fire would simply mean additional discomfort, arising from the constant dripping of water from the roof and walls—but rather for the light they give, for the melting of snow, and for cooking purposes. Not much heat is required for culinary operations, as much of their food is only half boiled, and the rest is eaten raw—the name Eskimo by which they are known to the outside world signifying “raw-flesh eaters.” Being unacquainted with the art of pottery, their cooking-vessels are formed of wood and stone, and are consequently unfit for putting over a fire. To heat water, therefore, they throw hot stones into the vessel, until the liquid has attained the necessary warmth—a method which by no means conduces to cleanliness. The temperature of an Eskimo house is always kept, if possible, below the freezing-point, while

that of the bodies of its inhabitants is maintained at about 90° Fahrenheit—the temperature of the human body all over the world—by the highly carbonized food which they eat, blubber and the fat of animals generally being the most heat-producing of foods.

The weapons they employ in the chase, the bows and arrows, spears, harpoons, knives, and fish-hooks, show great skill and ingenuity in their construction. They are usually made from some part or other of the animals they hunt, although now they are making use to some extent of such metals as the southern tribes obtain through intercourse with Europeans. Many of those weapons are ornamented with figures cut out in the bone or other material of which they are composed; these, consisting generally of drawings of animals and of hunting scenes, are marvellously skilful productions. Their talent in this direction is also seen in the rude but remarkably correct charts of their own coasts with which they have sometimes supplied Arctic explorers. On the other hand, they are without a written language, history with them taking the form of oral tradition handed down from one generation to another; and they are seldom able to count more than ten. According to Parry, they are such bad arithmeticians that “the enumeration of ten is a labour, and of fifteen an impossibility with them.”

Although possessing a hazy belief in a state of future rewards and punishments beyond the grave, their faith does not appear to have been strong enough to have led them to institute any form of worship, idolatrous or otherwise. The only authority to which they show any sort of submission is that of the *angeko*, the prophet, or, it may be,

the prophetess, who is sent for in sickness, or when it is desired to secure success in any complicated undertaking. After receiving a present—and the larger the gift the more certain is the Eskimo of a favourable result—the *angeko* performs certain incantations, in which his audience takes a subordinate part, and which are supposed to be effectual for the purpose in view. In illness no medicine is prescribed or taken. They have many curious customs, regarding which they can give no other explanation than that “the first Innuits did it;” *Innuits*, signifying “the people,” being the name by which they call themselves. Thus, when they kill a reindeer, they cut off certain parts of it and bury them under a sod; and they never pass the place where a relative whom they respected has died without placing a piece of meat near by. Their affection for their children is very strong, and on the death of a child all its playthings are buried with it. At certain seasons the doing of things highly commendable in themselves is forbidden; thus it is unlawful to work on reindeer-skins after the hunting of the walrus has begun. After a walrus is caught the fortunate hunter must do no work for an entire day; after the capture of a whale the period of rest is two days; and after a Polar bear, three days. If the game, however, is plentiful, many an Eskimo hunter continues the chase, and satisfies his conscience by fulfilling all the appointed days of rest together when the hunting is over.

The Eskimos are not lacking in the means of amusement. They are fond of music; and although the drum is their only musical instrument, the deficiency is made

up by their vocal efforts, singly and in chorus. They are also fond of dancing; and have devised many indoor games, some of which bear considerable resemblance to those of our own country. Under the belief that the sun is renewed annually, they have the yearly custom of sending round two men, one of them dressed as a woman, on New Year's Day, to put out all the fires, which are then kindled afresh. The Eskimos are thoroughly conversant with the habits of all the wild animals frequenting their territory, and this knowledge they are supposed in many cases to have turned to good purpose. Thus the *igloo*, or snow-hut of the seal, is supposed to have supplied them with the model for their winter snow-houses, while the Polar bear lying in wait for the seal near its breathing hole in the ice in all probability suggested to the savage Eskimo his present mode of capturing the same animal.

The Eskimos are a kind and generous people, sharing in times of scarcity their food with those of their brethren who are in want, and exceedingly hospitable, as many Arctic travellers have testified, to strangers. They are strictly honest and truthful in their dealings with each other, although the temptation to steal, when suddenly brought into contact with foreign ships laden with what to them must have appeared untold wealth, may have occasionally proved too strong to be successfully resisted. Above all, they are a peaceable people. Captain Ross met certain tribes of them in Baffin Sea who were entirely without warlike weapons, and who could not be brought to understand what war was. They recognize neither king nor chief, although among them, as everywhere else, the man of

greatest wisdom is looked up to, and his opinion taken when a difficulty arises.

Such are the Eskimos. We may now turn our attention to the animals they hunt or train ; the animals which frequent the same gloomy regions of ice and snow. Foremost among these, to adopt the words of the poet,—

“ Rough tenant of these shades, the shapeless bear,
With dangling ice all horrid, stalks forlorn ;
Slow-paced, and sourer as the storms increase,
He makes his bed beneath th’ inclement drift,
And with stern patience, scorning weak complaint,
Hardens his heart against assailing want.”

The Polar Bear is an animal of great strength and fierceness ; and he seems to grow the stronger and fiercer the further north he dwells. His rich soft fur is of a yellowish-white colour ; he has a long flat head, a long neck, high legs, and a powerful body. It is curious to observe how admirably his feet are adapted to the conditions under which he lives. The sole is provided with a kind of thick fleece, so that he treads the rough ice as on a carpet ; while, the toes being connected by a membrane or web, the feet serve as paddles when he takes to the water, which he frequently does.

He is not often found on the land. He loves to prowl about the floating ice-field, where he feeds upon the dead bodies of whales and seals, or attacks the latter on their emergence from the water. When he catches sight of a seal basking in the sunshine on a distant piece of ice, he quietly drops into the water and swims until to leeward of his intended victim, who otherwise would scent his

approach ; thence, by short but frequent dives, he silently continues his approach, and so arranges his distances that after the last dive he comes up at the spot where the seal is peacefully reclining. If the poor animal attempts to escape by rolling into the water, he finds himself in the bear's terrible grasp ; if, on the contrary, he lies still, his enemy makes one powerful leap, kills him on the ice, and proceeds to devour him.

The Polar bear, unlike other species, does not hibernate, as, its food being chiefly animal, it is able to obtain a supply of it at all seasons. The male is said to leave the land in winter and go out on the ice to the edge of the water, where it hunts the seal. The females, or such of them at least as are about to produce young, bury themselves in the snow from November to March. Preparatory to going into winter-quarters, the she-bear selects a hollow place, often at the foot of a bank or underneath overhanging rocks, and there allows the drifting snow to cover her over to a considerable depth. She is at this season very fat, and on this fat she subsists for nearly five months, during which she sleeps in her bed of snow. The latter gradually enlarges around the bear, owing to the melting of the snow caused by the animal's warmth. When the spring sun begins to grow warm the she-bear awakens, and her two cubs are born. These she suckles until, thin and emaciated with long fasting, she at length breaks through her icy prison-house. The Eskimos kill great numbers of the females in their holes during winter, being greatly helped in this by their dogs, who scent them and then begin scratching at the snow overhead. As it would be




POLAR BEARS.

unsafe to make too large an opening, a narrow trench is dug, just wide enough to let a man see where the creature's head lies. This being ascertained, the spear of the Eskimo is thrust into a mortal part, and the prize is then dug out. At this period the young, having never tasted blood, are quite gentle and harmless, and can be taken out alive with the hand, although already nearly as large as a shepherd's dog.

The Polar bear is a great sailor, and takes advantage of floating masses of ice to transport himself from one island to another. In this way he occasionally gets as far south as Iceland, where parties of bears have been known to land, as the old Norsemen used to do on the English coast, and do great damage by attacking and devouring the flocks, until the inhabitants rose *en masse* and destroyed them. A recent traveller in Iceland states that in 1859 vast masses of Polar ice were swept down on that coast, and that on this pack the Icelanders received an importation of no fewer than thirteen Polar bears. Weak and emaciated, however, from want of food during their long sea voyage, they were easily despatched on landing. "One of these brutes," says the traveller, "made his entrance into a peasant's hut on the north-west coast in rather an uncere- monious manner. The snow being on a level with the roof, Bruin found himself there in his travels in quest of food. Attracted, I imagine, by the redolent odour from within, he commenced scratching, and eventually went headlong through, scaring the whole family. The poor beast, however, scarcely less frightened, was speedily despatched and eaten, the fate of everything the natives can

lay hands on during the winter months." The Polar bear is also a great swimmer, Captain Sabine having observed one making its way between the north and south shores of Barrow Strait, which are forty miles apart.

Like the human inhabitants of those regions, the Polar bear often has recourse to stratagem in order to secure its prey; thus it has been observed attempting to make a hole in the ice at which to hunt for seals. The curiosity of the seals leads them to pop up their heads at whatever openings may be made in the ice, and there they are often seized and dragged out by the wily bear. He is afraid to attack the walrus when the latter is on its guard, and consequently he seeks, though not always successfully, to approach it by stratagem. Admiral Beechey tells of a walrus which once rose to the surface in a pool of water near him, and which, on seeing the way clear, drew up its unwieldy bulk on the ice, where, after rolling about for some time in evident enjoyment, it at length composed itself to sleep. Meanwhile a bear, which, it is to be presumed, had all the while been watching with greedy eyes the gambols of the greasy monster, was observed crawling stealthily along the ice on the opposite side of the pool, imitating the gambols of its intended victim—with this difference, that its affected frolics always brought it nearer to the walrus. The latter, however, had its suspicion aroused, and was about to beat a hasty retreat, when Bruin suddenly changed his tactics and lay motionless as if asleep. Having thus, as he thought, allayed suspicion, he shortly after began licking his paws and cleaning himself, all the while lessening the distance between himself



and his prey. His cunning, however, in this instance was thrown away, the walrus being evidently too old to be thus caught; for it suddenly plunged into the pool and made off, followed in an instant, however, by the bear, who, seeing it was no longer of any use, at once threw off all disguise. The result was not observed, but the bear had little chance of success against the walrus in its own element.

The strength of the Polar bear may be inferred from his size: he generally measures six feet in length, and about three feet in height to the top of the shoulder; but individuals of nine to ten feet are met with. He is not an unsociable animal, and usually wanders about in small troops, while bears of a family always "flock together." Parents and offspring are united by bonds of the most devoted affection, and the vigilant care with which the female watches over her cubs has been remarked by every traveller. The following story is perfectly true:—

A vessel was set fast in an ice-field, and unable to move. One morning the look-out man gave notice of the approach of three bears, which the scent of some seal's flesh roasted on the previous evening had attracted towards the vessel. The party consisted of a she-bear and her two cubs. As roasted bear does not make a bad dish, the seamen watched their opportunity, fired at the cubs, and killed them. The mother was also wounded, but not mortally. It was a spectacle which drew tears even from the rugged seamen, to see the marks of sorrow and tenderness lavished by this poor beast upon her young. She had got hold of a piece of the seal's flesh, and carrying it to the dead cubs, she divided it into two

portions, which she placed before them. Seeing that they did not eat, she touched first one and then the other with her fore paws, and endeavoured to raise them, uttering at the same time the most pitiful groans. Then she retired



THE BEAR AND HER CUBS.

a few paces, halted, and seemed to summon her little ones by a low sad cry. As they remained insensible to her appeal, she returned to them, moved them anew, smelled them on every side, dragged them some little distance, withdrew and again returned, continually moaning and bewailing, licking their wounds, and calling them. At

length, convinced that they were dead, she raised herself half erect by a great effort, turned towards the boat, and gave vent to a roar of agony and rage. The seamen replied to it with a volley of musketry, and the poor bear fell smitten between her two cubs, and died licking their wounds.

The bear, when hungry or provoked, does not fear to attack man, and his great strength renders him a formidable antagonist. We read of an Eskimo who fired at a she-bear, and wounded her, but not mortally. She immediately rushed upon him before he could reload his gun, and he would have certainly perished but for his presence of mind. Seeing the bear's advance, he flung himself on the ground, putting forward his arm to protect his head, but afterwards lying perfectly motionless. The beast was deceived. She gave the arm a bite or two; but finding her enemy did not move, she retreated a few paces, and sat upon her haunches to watch. However, she did not watch carefully enough; the Eskimo contrived to reload his rifle, and firing a second time, brought her down dead.

The Eskimos hunt the Polar bear with dogs, and the chase and struggle are often very exciting. Dr. Kane is responsible for the facts of the following narrative:—

One morning his Eskimo aroused him with the shout of "Nannook, nannook!" (A bear, a bear!) and looking out he saw a she-bear and her cub engaged in active warfare with his dogs. They were hanging on her flanks, and she with wonderful quickness was picking out one victim after another, seizing it by the nape of its neck,

and flinging it many feet, or rather yards, by a scarcely perceptible movement of her head. Tudla had been tossed twice, and was unable to return to the charge; Jenny, another dog, after performing a somersault of forty to fifty feet, alighted senseless on the ice; and old Whitey was yelping helplessly in a drift of snow.

Having got rid of her adversaries, Nannook directed her attention to Dr. Kane's pile of beef-barrels, which she turned over and over with the utmost coolness.

But now the hunters were upon her! A pistol-ball was lodged in the side of her cub. At once she placed the little one between her hind legs, and, shoving it along, began to retreat behind the beef-barrels. She received a bullet herself, but taking no notice of the wound, tore down with her strong fore limbs the piled-up barrels of beef, mounted the breach, seized a small cask of herrings, carried it down by her teeth, and was making off! Dr. Kane saw that no time was to be lost, and poured into her body a volley of small shot. She dropped, but instantly rose, and getting her cub into its former position, once more retreated.

And certainly she would have escaped, but for the appearance on the battle-field of some Eskimo dogs which Dr. Kane had purchased. The dogs of the extreme north are more carefully and thoroughly trained than any of their more southern brethren. Unlike the Baffin Sea dogs, these new-comers had been taught to embarrass, and not to attack. They wheeled round and round the bear in circles; and when she turned upon them they took care to keep a safe distance ahead, while their comrades effected

a diversion at the critical moment by a sly and sudden bite at her hind quarters! It was admirably done.

The poor animal was still retreating, yet still fighting; closely beset by the dogs, yet bravely carrying along her wounded cub; when Dr. Kane and one of his men terminated the unequal struggle by firing their rifles at her. She staggered in front of her young one, faced them in death-like defiance, and only sank when pierced by six more bullets.

The cub was taller than a dog, and weighed 114 pounds. She sprang upon the dead body of her mother, and raised a woful lamentation over her wounds. All Dr. Kane's efforts to noose her she repelled with much ferocity; but at last, completely muzzled with a line fastened by a running knot between her jaws and the back of her head, she was dragged off to the ship amid the clamour of the dogs.

With the walrus the Polar bear also carries on a fierce but doubtful war, in which he does not often get the advantage. The walrus is gifted with immense strength, and his enormous tusks frequently beat off his formidable antagonist. The bear seldom ventures to attack, but watches anxiously for the huge carcass in a dead state, when it affords him "a prolonged and delicious feast." It is not seldom, however, that all his supplies fail him, and he is reduced to a half-famished condition. In such an event he becomes a dangerous opponent even for a well-armed man, and the records of Polar adventure are full of melancholy and disastrous incidents.

Of these, one of the earliest and most disastrous on record is that which befell the crew of Barentz's vessel on

his second voyage to Waigat Strait. Some of the sailors having landed in search, it is said, of "a certain sort of stone, a species of diamond," two of them during the search lay down together to sleep. Shortly after, a great white bear approached stealthily, and seized one of the seamen by the nape of his neck. He thinking it merely a bit of frolic on the part of one of his comrades, cried out, "Who's there?" when his companion, waking up, shouted, "A bear! a bear!" and immediately made off. The bear mangled the unfortunate sailor's head, and began sucking his blood. Those on shore, to the number of about twenty, seizing their matchlocks and pikes, ran with all speed to the rescue of their mate. The bear, by no means taken aback at this display of force, left the body of the dead sailor, and rushing upon its assailants, seized one of them and speedily despatched him, putting the others to instant flight. Somewhat ashamed of themselves, however, they renewed the attack, when one of them succeeded in shooting the bear in the head. Even then it did not abandon its prey, but attempted to escape, still holding the dead body in its teeth, till, beginning to totter, it was attacked and cut to pieces by the sailors.

With such unfortunate encounters we need not further trouble the reader. It will be more pleasing to speak of occasions when the fierce animal was foiled by human courage or presence of mind, or in some other way deprived of his intended victim. Thus: we read that, once upon a time, Jonge Kers, the master of a Dutch ship, undertook with a couple of canoes to attack a bear, and succeeded in inflicting on it such a terrible wound with a lance that

the captain looked upon it as a sure prize. He was unwilling to injure the skin, and contented himself, therefore, with following up the animal until it should fall dead. On went the wounded bear, marking its course across the snow by thick drops of blood, when, having painfully climbed a little rocky ascent, it made a sudden spring from the distance of twenty-four feet upon the skipper, who, completely surprised, lost his footing and fell beneath his assailant. A terrible situation! for the bear placed both its heavy fore paws on his breast, opened its wide and cruel jaws, and seemed on the point of despatching the unfortunate seaman. Happily, at this critical moment a sailor, rushing forward with only a spade, contrived to frighten the beast, which retreated at once, leaving the captain absolutely uninjured.

Captain Scoresby speaks of a boat's crew as having been attacked by a bear in the Greenland Sea. The animal scaled the side of the boat; whereupon the men, for the sake of safety, leaped into the waves, holding on by the gunwale. Triumphant Bruin composedly entered and took possession of the boat, where he sat in state until shot by another party.

The curiosity of the Polar bear is insatiable. Whatever he sees he stops to examine; whether because he suspects a snare, or whether because he hopes to obtain a prize, is difficult to say. This curious disposition sometimes assists his enemies, and often saves their lives. A sailor who was chased by one of these animals threw down successively his hat, his jacket, his handkerchief, and every other article in his possession; and as his pursuer paused

at each, and turned it over and over, and smelled and sniffed at it, he got so much ahead of him as to be able to reach his vessel in safety.

A party of Arctic explorers had halted in their long journey across the ice, and pitched their tent. They retired to rest, and after the day's fatigue slept as soundly



AN UNWELCOME VISITOR.

as tired children. Some time after midnight one of them was awakened by something or somebody scratching at the snow immediately above his head. He was roused sufficiently to recognize a huge animal actively engaged in reconnoitring the circuit of the tent. The cry he gave woke up his companions, but did not disturb the unwelcome visitor ; specially unwelcome at that time, midnight, and in that place, an unprotected tent, particularly

as all the guns had been left on the sledge, a little distance off, and there was not so much as a walking-stick inside ! You may suppose that a tolerable amount of confusion prevailed in that little council of war. The first impulse was to make a sortie for the weapons ; but this was soon decided to be impracticable, or dangerous, for the inquisitive Bruin, having satisfied himself with his observations of the exterior, now presented himself at the tent-opening. The whole affair was something new and strange to him, and, like other curious creatures, he wanted to know what it meant, and what was its object ; for he is the "Paul Pry" of the Animal World. Sundry volleys of lucifer matches and some impromptu torches of newspapers were fired at him, but he evinced no signs of alarm ; and after a little while he calmly planted himself at the doorway, and began making his supper off the carcass of a seal which he had discovered.

What was to be done ?

The "happy thought" occurred to one of the little company of effecting a sortie from the rear ; and, cutting a hole in the canvas, *he* crawled out *behind*, while the bear was occupied *before*. Disengaging a boat-hook that formed one of the supports of the ridgepole, he made it the instrument of a right gallant attack. A swinging blow delivered on the nose drove the inquisitive animal a few paces beyond the sledge. With the quickness of thought his chivalrous assailant leaped forward, seized a rifle, fell back among his companions, loaded it, and sent a ball through and through the body of the enemy. He fell dead ; a memorable example of the evils of misdirected curiosity \



BEARS BREAKING INTO A CACHE.

Dr. Kane, in the course of his Arctic wanderings, had occasion to erect a *cache*, or provision-store, containing a supply of stores for use on his return journey. His men

built it with the greatest care, piling up large fragments of rock, and with much labour rearing a structure which seemed most effective and resisting. It seemed impossible that any animals, however powerful, could break into and despoil it.

When Dr. Kane returned to the cache, he found that it had been plundered by the bears. These "tigers of the ice," as he quaintly calls them, "seemed scarcely to have encountered an obstacle." Not a morsel of pemmican (that is, preserved meat) remained, except in the iron cases, which, being round, with conical ends, were impervious to both claws and teeth. They had rolled them and pawed them in every direction, flinging them about like foot-balls, though each was upwards of eighty pounds in weight. An alcohol-case, strongly bound with iron, was splintered into small fragments, and a tin can of liquor "mashed and twisted almost into a ball." The strong sharp claws had perforated the metal, and torn it up as if it had been so much paper.

It was evident that in *this* instance their inquisitiveness had been abundantly rewarded. Salt meats they had passed by contemptuously, but they had done justice to the ground coffee. For some reason or other, old canvas had been a favourite with them; even the flag which had been reared aloft on the cache they had gnawed down to the very staff. "They had made a regular frolic of it; rolling our bread-barrels over the ice-foot, and into the broken outside ice; and, unable to masticate our heavy india-rubber cloth, they had tied it up in unimaginable hard knots."

But we must leave the Polar bear, with all his ferocity, courage, strength, curiosity, and affection for his young, and turn to the animal with which the Eskimo pursues



ESKIMO DOGS.


his ancient enemy. The Eskimo Dog is a product of the extreme north, and bears a closer resemblance than most dogs to the animal which is supposed to have been their

original parent, the wolf. In form he is like the well-known collie, or shepherd's dog ; but then he is as tall as a Newfoundlander and as broad as a mastiff. He has short pricked ears, elongated jaws, a furry coat, a bushy tail. His aspect is somewhat wild, and it does but justice to his disposition, though the Eskimos have succeeded in taming him, and rendering him equally useful for draught and for hunting. Nature has defended him against the rigorous climate of the bleak region he inhabits by providing him not only with an abundance of long hair, but with a soft downy covering, which forms beneath it at the beginning of winter, and falls off at the return of summer.

The Eskimos have been censured by some English travellers for their cruel treatment of these valuable servants, but it would seem that their fierceness can only be kept down by a severe rule. When they are young they are used with great tenderness, the women often taking them into bed, and feeding them from their own mouths ! The reader would scarcely do so much as this for a pet cat or a pet rabbit. As soon as they can walk they are yoked to a small sledge. Of course they try to get rid of the burden, and thus are taught, in time, to draw it. They gallop with much swiftness, and their strength is great ; but they frequently endure severe suffering from hunger. In seasons of scarcity their allowance is barely sufficient to support life. Then they have to satisfy their appetites with almost anything ; and Captain Parry speaks of one which ate a cotton handkerchief, a linen shirt, and a piece of canvas,—articles, I think, of no very nutritious character.

Dr. Hayes very justly speaks of the Eskimo dogs as "singular animals," which afford a subject of curious study. They have their leader and their sub-leaders, the rulers and the ruled, like any other community which desires orderly government. The governed get only what rights they can, and the governors bully them continually in order that they may enjoy security against rebellion, and live in peace. And a community of dogs, according to Dr. Hayes, is really organized on the basis of correct principles. As an illustration:—"My teams," he says, "are under the control of a big aggressive brute, who sports a dirty red uniform with snuff-coloured facings, and has sharp teeth. He possesses immense strength, and his every movement shows that he is perfectly conscious of it. In the twinkling of an eye he can trounce any dog in the whole herd; and he seems to possess the faculty of destroying conspiracies, cabals, and all evil designs against his stern rule. None of the other dogs like him, but they cannot help themselves; they are afraid to turn against him, for when they do so there is no end to the chastisements which they receive." After all, this is no more than we see in human society; every school, every neighbourhood, every family has its "ruling spirit."

This dog of Dr. Hayes' was named Oosisoak, and besides being a dog of strength, a dog of courage, and a dog of sagacity, he was also a dog of sentiment. He had chosen a partner to share the glory of his reign, to soothe him in his sorrows, to rejoice with him in his victories, to lick his wounds when fresh from the gory battle-field. Oosisoak had a queen; and this object of his affection,



this idol of his heart, was never long absent from his side. She ran beside him in the team ; she fought in his cause more resolutely than any one of his male subjects. And in return for this devotion she was allowed pretty much of her own way. She would steal the bone out of his hungry mouth, and he yielded it with a sentimental grimace that was the very climax of canine affection. However, at times his hunger would be very keen, and he would then trot after her, and when he thought she had had her share would growl significantly : she accepted the warning, and dropped the bone without even a murmur. If the old fellow happened to be particularly cross when a reindeer was flung to the pack, he would place his fore feet upon it, begin to gnaw away at the flank, growling all the while a wolfish growl ; and not a dog durst approach him until he had satisfied his appetite, except Queen Arkadik (such was her romantic name !), nor could *she* approach him except in one direction—namely, she must come alongside of him, and crawl between his fore legs, and lovingly and deferentially eat from the spot where he was eating !

That these dogs can bear extreme cold without apparent discomfort, is seen from the fact that they have been known to lie outside in the snow with the thermometer forty-two degrees below zero. In proportion to their size, their strength also is enormous, three or four of these dogs being able to draw along the carcass of a walrus. Captain Lyon, who had large experience of them, states that three of his dogs could draw him on a sledge weighing one hundred pounds at the rate of ten miles an hour,

the leader of his team alone drawing one hundred and ninety-six pounds one mile in eight minutes. For the prosecution of Arctic expeditions the Eskimo dogs are simply indispensable; they are, however, exceedingly troublesome to manage, and in spite of their many good qualities, have so many of an opposite kind, that they have come to be regarded by Arctic travellers generally as necessary evils; thus Kane speaks of them as an "unruly, thieving, wild-beast pack." At home, he says, "one would fear to encounter such hoopspined, spitting, snarling beasts as the Eskimo dogs of Peabody Bay. But wolves as they are, they are far from dangerous; the slightest appearance of a missile or cudgel subdues them at once. Indispensable to the very life of their master, they are treated, of course, with studied care and kindness; but they are taught from the earliest days of puppy life a savoury fear that makes them altogether safe companions even for children." They are, however, he avers, absolutely ravenous of everything below the human grade; and he tells how, when feeding his dog and her pups, one of his Eskimo team made a pounce on one of the pups and gobbled it up in an instant.

The reader will probably desire to know something of the machine to which these strange dogs are harnessed. Well: an Eskimo sledge is a very remarkable and a very ingenious affair. It is made wholly of bone and leather. The runners, square behind and curved upwards in front, measure about five feet and a half in height, and nearly an inch in thickness; they are made of bone; not solid, but composed of numerous pieces, of all shapes and sizes,

dexterously fitted and firmly lashed together. Some of these pieces will be no larger than a man's two fingers; others three or four inches square; others the size of one's hand,—and all put together as neatly as the different parts of a dissecting map. The fastenings used are strings of seal-skin.

The bones are flattened and cut into the required shape with stones. The grinding needed to make a single runner must be a work of months; and the construction of an entirely new sledge would seem to occupy a generation! Generally, repairs are made as any part becomes broken or decayed; so that in time nothing of the original vehicle remains—and yet it is *the same sledge*, like the sailor's knife, which had a new blade, and then a new handle, but was still his old and trusty favourite.

The runners are placed about fourteen inches apart, and fastened together by bones securely lashed to them—the thigh-bone of the bear, the antlers of the reindeer, and the ribs of the narwhal. Two walrus-ribs are bound, one to the after-end of each runner, for upstanders; and these are braced by a piece of reindeer antler secured across the top.

Now let us watch an Eskimo hunter preparing for the chase, and observe in what manner he stows away his equipment. First, a piece of seal-skin is spread over the sledge, and fastened tightly by little strings attached to its edges. Upon this a small piece of walrus-skin is placed, for the dogs; and a piece of blubber and another of meat, for himself. He is bound upon a hunt which may be prolonged over several days, and yet, unless he should capture

some game, this is his sole provision. He will cook no food during his absence, but he will want water to quench his thirst. He carries with him, therefore, a small stone dish as a *kotluk*, or lamp; a lump of *mannek*, or dried moss, for wick; some *na-owinak*, or willow blossoms, for tinder. These last are carefully wrapped up in bird-skin to protect them from damp. He takes with him also a piece of ironstone and a small sharp fragment of flint, with which to strike a light.

Let us follow him in his future proceedings. After a wild drive over the hummocks, and through a storm of snow and ice, he feels athirst. What does he do? He pulls up his not reluctant team; dismounts; scrapes away the snow until he gets at the solid ice beneath, and in this crystal solid he digs out a tiny cavity. On the edge of this cavity he places his lamp, which he sets ablaze with blubber; and procuring a lump of fresh ice from some convenient spot near at hand, he melts it by the heat of the flame. The process is a slow one; but the Eskimo is patient, and waits contentedly while drop after drop of smoky, soot-coloured water trickles into the hole. When a sufficient quantity has been collected, he throws himself on the ground and drinks it up with as much relish as an epicure drinks his draught of fragrant wine. Then he gets ready his dinner; a few slices of blubber, and a few chips splintered off the lump of frozen walrus-beef. When one's wants are few, they are easily supplied.

But we must return to the equipment of the sledge.



ESKIMO AND SLEDGE.



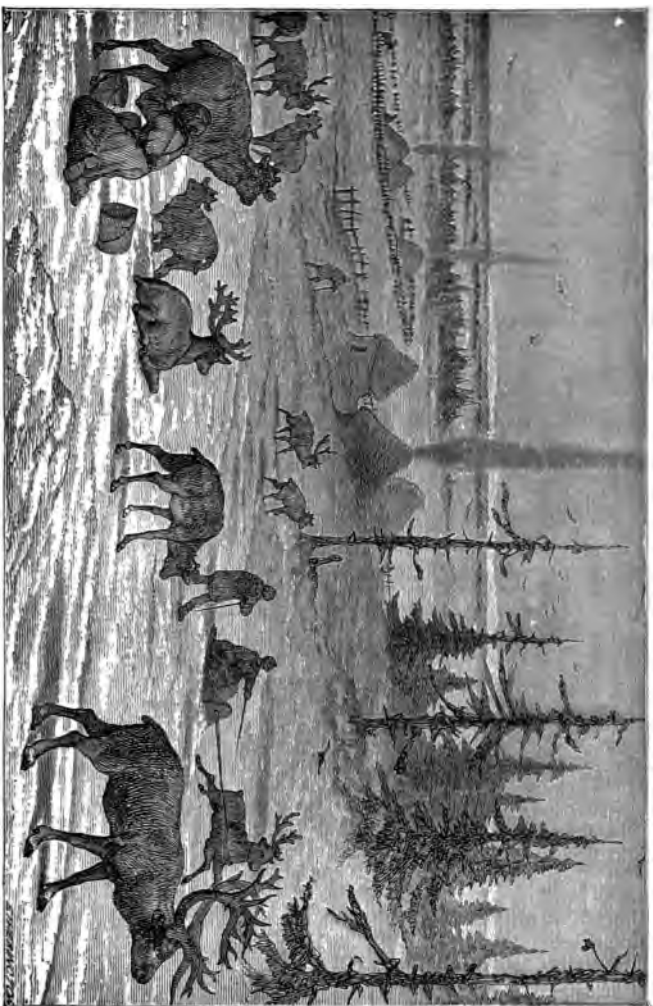
Having loaded it with all that he requires, our hunter flings over it a bear-skin, doubled,—which when opened out is of sufficient size to wrap round his body, and protect him from the snow, should he want to rest. Next he draws out a long line, which he crosses and intercrosses from runner to runner, until his cargo is thoroughly secure. A coil of rope is suspended to one of the runners for catching walrus, and another coil of lighter line to the other runner, for catching seal. Nor is the harpoon forgotten; a heavy piece of ivory, the tusk of a narwhal, five feet long, two inches thick at the handle end, and tapering to a point at the other.

Now, with a whoop and a rush, the dogs, seven in number, are brought up, and we have time to examine their harness. It is simple even to rudeness, but yet very effective. Two doubled strips of bear-skin are placed one on either side of the animal's body, and fastened together, so as to form a collar, on the top of the neck and at the breast. Thence they pass inside of the fore legs, and up to the tail, where the four ends are knotted to a trace eighteen feet in length. The trace is connected with the sledge by a line four feet long, the ends of which are attached to the runners. To this line, in the middle, is tied a strong string running through bone rings at the ends of the traces, and secured by an easy slip-knot. The usefulness of this arrangement is seen in bear-hunting. The hunter drives his sledge until within fifty yards of the bear; he then leans forward and slips the knot. The dogs, released from the sledge, bound ahead, attack the bear, and quickly bring him to bay. But if the knot should

foul, as sometimes happens, the consequences are disastrous. In vain the hunter's stiffened fingers seek to disentangle it, and before he can draw his knife (if he has one) and cut it, hunter, dogs, and sledge are all involved in terrible confusion, and placed at the mercy of their infuriated enemy.

The sledge is loaded, the dogs are harnessed and eager to be off; with his right hand he uncoils his long whip-lash, with his left he seizes an upstander, and pushing the sledge forward a few paces, he utters the well-known shrill starting-cry, "Ka! ka!" and away dashes the team over the rugged ice. It needs all the Eskimo's skill and coolness to guide his sledge over and among the hummocks, and across chasm and crevasse, and at times he has to check the impetuosity of his dogs with the nasal "Ay! ay!" which they well understand. On reaching the smooth ice he drops into his seat, allows his long whip-lash to trail along the snow, quickens his wolfish steeds with a sharp "Ka! ka!" and disappears in the distance at a tremendous rate.

As the Eskimo dogs are keen of scent, they are invaluable in the chase of the Reindeer, an animal which occupies much the same place in the economy of the Arctic wilderness as the camel in that of the African or Asiatic desert. It is to the Lapp, however, that the reindeer is most useful. The Eskimos do not tame him or yoke him to the sledge; nor would he be able to work it in the desolate solitudes which are familiar to the dog. They prize his skin as a precious winter robe; his venison is a



THE REINDEER IN LAPLAND.

delightful change after walrus-beef or seal-blubber ; and his pursuit affords a pleasant occupation in the summer. This is all, and it is not much. But to the Laplander he is a staff of life ; nay, he is a faithful servant, a trusty companion, an uncomplaining friend.

His size is that of our English stag, but he is less graceful in figure ; his limbs are shorter and thicker. He stands about four feet high. Long and slender horns are borne like waving boughs upon the head in both sexes. His skin is of a brown colour on the upper part of the body, white on the lower ; but as he grows old he assumes everywhere a kind of grayish-white. The nether part of the neck droops like a beard. His hoofs are large, long, and black ; so are the secondary hoofs behind,—and these, when he is running, clatter and clash, so as to be heard at a considerable distance.

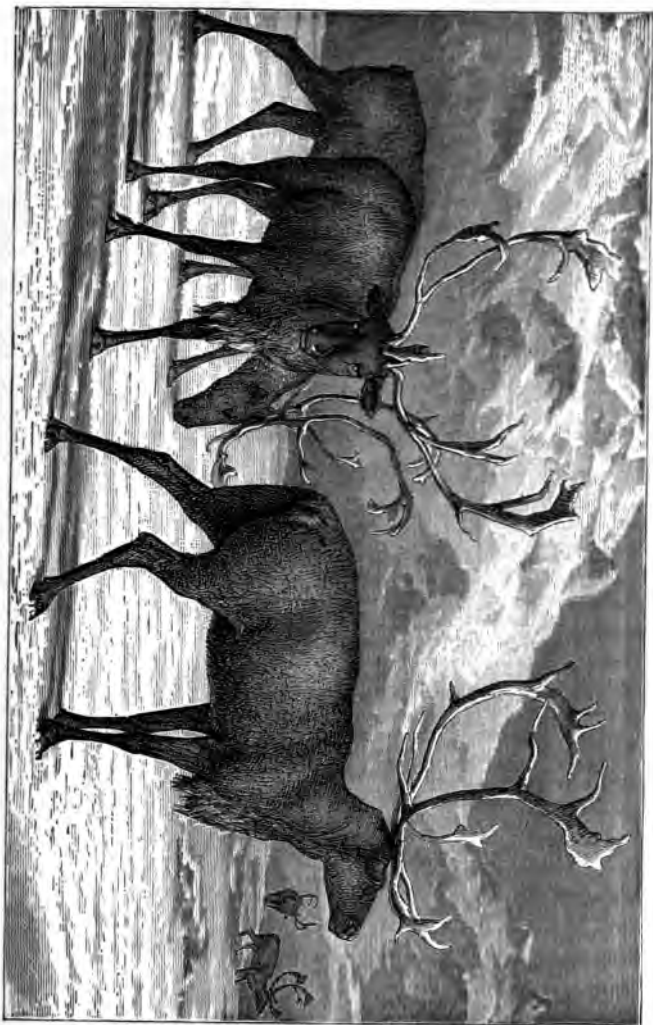
The reindeer feeds on a moss or lichen called the reindeer moss ; it grows under the snow during the winter, and is then his only food. There is something very wonderful in the abundance of this lichen in the particular localities which the animal frequents. In those immense sandy plains, or *tundras*, which border on the Arctic Ocean, it flourishes profusely, covering the ground with its silvery tufts. No plant is so luxuriant in the numerous pine-forests of Lapland, where it spreads its soft carpet for many leagues ; and though the woods should be burned down to the very earth by any accidental fire, it quickly reappears and recovers all its wonted vigour. Barren as these plains seem to the eye of the stranger, they are fertile and blessed pastures to the Laplander, where vast

herds of reindeer freely roam, finding ample sustenance where the horse, the camel, or the elephant would perish.

The reindeer, as we have said, is "the life, hope, and wealth" of the inhabitants of the far northern lands. It draws their burdens with an ass's patience; yields milk with a cow's docility; and transports its master from place to place with a horse's speed and endurance. Its flesh serves for food; its tendons for bow-strings; its furry skin for clothing and coverlets. Yet this wonderfully useful animal depends on a tiny lichen for support! Without the reindeer moss, there would be no reindeer; and hence an apparent trivial plant lies at the bottom of all the comfort and wealth and pastoral happiness of a large and vigorous population.

The American variety of the reindeer is called the Cariboo, and is somewhat larger than its European congener. It has never yet been subdued by man, or trained to draw sledges and carry burdens; though it is an animal of great powers of endurance, and when pursued will often prolong the chase over four or five days. It usually succeeds in effecting its escape, making as rapidly as possible for the frozen surface of the lakes, where it soon outstrips the hunters. Its method of progression, however, is very grotesque, and not altogether the result of its own will. Dashing forward headlong, it is suddenly alarmed by some object in advance; in the effort to check its mad career, it drops on the ice in a sitting posture, and in that attitude, by the impetus of its previous motion, is carried on for some distance before it can stop itself. Then it springs again to its feet, and darts away in a different direction;

CARIBOO, OR AMERICAN DEER



100

and so, by dint of galloping and sliding, contrives to cover the ground with really wonderful speed.

The hunter, therefore, has frequent recourse to stratagem in order to capture an animal which is at once so swift and so wary. He digs a large pit, a pit large enough to hold several deer. The opening he covers with a slab of ice or frozen snow, balancing it on a couple of pivots in such a way that when the cariboo treads upon it, down it falls, deposits the startled animal in the abyss beneath, and then resumes its position to deceive another victim. Or he pursues a plan similar to that of the Cingalese for catching elephants. He encloses a considerable area, about half a mile in circuit, leaving a free access to it at one point only. Through this opening he and his fellow-hunters drive the caribos into the enclosure, which is divided into numerous alleys,—each alley being furnished with a noose in which the deer are caught and strangled as they move restlessly about their prison.

The cariboo often falls a prey to its insatiable curiosity. Without other apparent motive, a whole herd will approach sufficiently near to allow the hunter to select the fattest as his victim. The Copper Indians have found that it is most readily attracted by a white dress ; they also attract it by kneeling on the ground and moving their guns backward and forward in imitation of the deer rubbing its horns against a stone. A somewhat similar deception is practised, and with remarkable success, upon the unsuspecting cariboo by the Dog-rib Indians. The hunters go in couples, the foremost carrying in one hand the skin and horns of a reindeer, and in the other a bundle of twigs,

against which he occasionally rubs the antlers in imitation of the animal's own gestures. His companion walks behind, treading exactly in his footsteps, and bearing his own and his partner's gun in a horizontal position, so that their muzzles project beyond the arms of the man in front. They approach the herd by degrees, raising their feet slowly, but putting them down suddenly, after the manner of the deer. Should any of the herd stop to gaze upon this dumb show, the hunters immediately stop, and the deer's head is made to appear as if licking the shoulders, and performing other equally customary operations. By such means the suspicion of the herd is so allayed that the hunters usually make their way into the centre of them, and select their victims. No sooner is this done than the man behind pushes forward his comrade's gun, the head and skin are dropped, and the rifles are discharged simultaneously. Off go the deer, followed by the hunters, who, as soon as the former halt to ascertain what all the noise was about, again discharge their rifles, which they took the opportunity of reloading as they ran. This goes on, the confusion of the deer constantly increasing, until the greater part of the herd fall victims to the superior cunning of man. The inquisitiveness of the creature is calculated upon in most of the stratagems employed for its capture: thus the Eskimos, when hunting in couples, sometimes show themselves on purpose to the cariboo, and after its attention has been fixed upon them, they walk slowly off, when the deer is sure to follow. Having reached a large stone, one of the hunters conceals himself behind it, his companion walking on, followed at a respectful distance by the

deer, who in this way comes unwittingly within easy reach of the arrow of the concealed bowman.

For all purposes, except as a beast of burden, the cariboo is as essential to the Eskimos and certain North American Indian tribes as its European congener is to the inhabitants of Lapland. Its flesh is eaten ; and *pemmican*, which has figured so largely in the food stores of Arctic expeditions, is formed by pouring one-third of melted fat over the dried and pounded meat, and mixing them well together. "If kept dry," says Richardson, "*pemmican* may be preserved sound for three or four years, and, from the quantity of nourishment it contains in small bulk, it is perhaps the best kind of food for those who travel through desert lands." With its antlers they form fish-spears and fish-hooks, and before the introduction of iron they also made their ice-chisels of the same material. The hide dressed with the fur forms excellent clothing. When tanned it forms a soft leather used for moccasins, and a number of the skins sewed together form a comfortable tent. The hide is also made into thongs, which are made to serve all the purposes of rope, the finer thongs being used in the manufacture of fishing-nets, and the tendons when split forming thread.

The Arctic explorer, as he traverses the snow-covered plains and hills of Siberia or Lapland, Iceland or Kamtchatka, or the wilderness of Polar America, is frequently surprised by the appearance on some distant ridge of a small animal, clothed in long white silky fur, with quick bright eyes and a bushy tail. On his approach it greets him with a loud yelp, and retires into its burrow ; but



ARCTIC FOXES.

only to put forth its head again and again, as if to watch the stranger's movements. This is the Arctic Fox ; a lively, intelligent little creature, which congregates in herds of twenty or thirty, and dwells in burrows excavated in the earth during the summer months. It changes the colour of its coat according to the seasons. In winter it is pure white, and at a distance cannot be distinguished from the snow among which it lies ; in the spring it assumes a mottled appearance ; and in summer is of a beautiful bluish-gray. Hence it is sometimes called the white fox, and sometimes the blue or pied fox. Its fur, especially when of a winter whiteness, is much valued by the hunters.

The animals which inhabit the extreme northern limits of our globe seldom display the acuteness of wariness that

characterizes their congeners in the south; perhaps, because they have been less exposed to the attacks of man. The Arctic fox is no exception to this rule. It possesses none of the cunning which has made the European fox proverbial; and the only instance it gives of shrewdness is the facility with which it imitates the cries of various birds, so as to entice them within its reach and satisfy its appetite. It is a gentle little animal, and easily tamed. On Captain Parry's second voyage about a hundred were caught, and some of these the sailors made pets of. Others, less fortunate, were dressed for the table; and their flesh, somewhat resembling kid, afforded an agreeable relief after a prolonged course of salted meat.

No matter how hungry the Arctic fox may be, its first impulse after receiving food is to attempt to secrete it, and a convenient means for accomplishing this it finds in the surrounding snow, which it piles over its store. So strong is this instinct that a fox kept by Captain Lyon on the deck of his ship used to coil its chain around any food given to it, in order that it might have the necessary concealment previous to its being eaten, and the creature seemed greatly annoyed every time it moved away to find that the chain was always certain to follow. They also store their food for winter use, Captain Feilden, during the late Arctic expedition under Sir George Nares, having found holes containing large numbers of lemmings which had been killed and stored away by the Arctic fox.

Although remarkably intelligent and capable of a certain degree of domestication, this handsome creature is remark-

ably unsuspecting, having been known to look on while the hunter baited his trap, and to rush into it as soon as he had retired. It is an exceedingly cleanly animal, and has less of that peculiar foxy smell than any other member of the group to which it belongs. It is a nocturnal animal, sleeping at the mouth of its burrow by day, but correspondingly active throughout the night.

As the jackal is often seen in the wake of the lion, feeding on whatever crumbs the "king of beasts" may let fall, so the Arctic fox would seem to follow the Polar bear. According to Kane, the two are often seen together; and on one occasion, when, having wounded a bear, he had to follow it up for about twelve miles, he observed a miserable little fox keeping close behind its patron, and licking up the blood which trickled from its wounds; and when the bear finally took to the water, rendering further pursuit impossible, the traveller saw the fox running at full speed along the edge of the ice, as if anxious to rejoin its wounded lord.

At night the loud howlings around his hut or vessel indicate to the explorer that the craftiest and most cruel of animals, the Wolf, is also a denizen of the Arctic Regions. The range of the wolf is very wide. He is found in almost every quarter of the globe: he haunts the forests of France and Spain, the prairies of North America, and the woods of Norway. North and south we meet with this deadly and voracious creature, which has become the type of treacherous cruelty, and in every country figures largely in the legend, the fable, and the ballad.

Even in the depth of the Polar winter he roams across the ice-fields and descends the snowy valleys in search of prey, though it is difficult to conjecture what food he can find at such a season. If a ship is nipped in the ice, and compelled to remain all the winter under the rigour of the Arctic heavens, he prowls around it in the darkness, and banquets upon the offal cast from it, and tortures the ears of the seamen with his nocturnal serenade. He seems to have acquired some notion of the deadly character of European fire-arms, and therefore never attempts to enter our ships or attack their crews; but he forces his way into the huts of the Eskimos, and pounces upon their dogs. The Eskimos, in return, pursue him incessantly, catching him in traps which are ingeniously constructed of little slabs of ice. These are arranged in the shape of a small oblong shed, with a portcullis of ice at the entrance, connected in such a manner with the bait inside, that when the wolf enters and seizes the latter the portcullis drops, and the voracious depredator finds himself caught. He is then put to death with spears.

He is always hungry and always cruel. He will attack almost any living thing, from man down to frogs and lizards. Even the Polar bear is not safe from his assaults, and, when surrounded by a howling, furious pack, frequently falls a victim. In his hunting expeditions he always associates himself with others of his own kind; and when once the pack have scented a quarry, they pursue it with tireless, unrelenting ardour. Should it be the swiftest horse, they will run it down, never seeming to weary or falter in their long, shambling, but rapid gallop; and when

once they have brought it to bay, how can it resist the attacks of their sharp and cruel teeth ?

They are as cunning as they are fierce. Captain Lyon relates an anecdote of a wolf which had been caught in a trap, and being apparently dead, was dragged on board his ship. On closer examination, however, it was observed that his eyes winked whenever an object was placed near them. Some precautions, therefore, were considered necessary, and his legs being tied, he was hoisted up with his head downwards. He then, to the surprise of his captors, made a vigorous spring at those near him ; and afterwards repeatedly turned himself upwards so as to reach the rope by which he hung, endeavouring to gnaw it asunder, and making angry snaps at the persons who prevented him. Several heavy blows were struck on the back of his neck, and a bayonet was thrust into his body, yet such is the wolf's tenacity of life, that a quarter of an hour elapsed before he died.

The same writer furnishes some interesting particulars of the habits of the wolf. One afternoon a fine dog was lost. It had strayed to the hummocks ahead, without its master, and a seaman who was near the spot saw five wolves rush at, attack, and devour it, in a wonderfully short space of time. Before he could arrive on the scene, the carcass was torn in pieces, and he found only the lower part of one leg. He adds that the boldness of these animals was altogether astonishing. They might be almost constantly seen among the hummocks, or lying quiet at no great distance, waiting and watching for the dogs. *He did not think, however, they would attack a single*

unarmed man, as both English and Eskimos frequently passed them without a stick in their hands. The animals, however, showed no signs of fear, but rather a kind of tacit agreement not to be the beginners of a quarrel, even though they might have been certain of proving victorious.

Another time, when hunger-pressed, a pack of wolves broke into a snow-hut, in which were a couple of Eskimo dogs. These they carried off, but not without some difficulty, for even the ceiling of the hut was found besmeared with blood and hair. On an alarm being given, the wolves were fired at, when one of them was observed to carry a dead dog in his mouth, clear of the ground; and though the animal must have been of his own weight, he cantered away quite easily.

Wolves are exceedingly partial to pork, and the hunters in the north of Europe avail themselves of this partiality to entice the cunning animals within reach of their guns. They sew up in a sack a small young pig, leaving only his snout free, and place him in a sledge, to the back of which is fastened, by a rope about fifty feet long, a small bundle of straw covered with black sheep-skin. Of course, when the sledge is in motion, this dangles about like a young porker.

A hunting-party, provided with this bait, once set out on an expedition. On arriving at what seemed to them a favourable spot, they pinched the pig, which squealed lustily, and, as they had anticipated, soon drew a host of famished wolves about the sledge. On their approaching within range, the party opened fire, and brought several to the ground: all that were either killed or wounded

were quickly torn to pieces and devoured by their comrades. But this feast of blood only made still fiercer and hungrier the ravenous beasts, which, in spite of the constant volleys of the hunters, advanced close to the sledge, apparently resolved on an immediate assault. As a measure of self-protection they threw the pig to the wolves, and for a few minutes it occupied their attention. But, meanwhile, the horse, driven to madness by the howling and rushing of the wolves, struggled and plunged so violently as to break the shaft in pieces, when he galloped off, and effected his escape. The pig was soon devoured, and the wolves then turned upon the hunters. The latter, finding themselves in a position of some danger, turned the sledge bottom up, and took refuge beneath it; and in this temporary asylum they remained for several hours, with the wolves snarling and yelping around them, and making repeated attempts to overthrow the sledge, until they were rescued by some friends.

The wolf is, however, exceedingly suspicious of man, and his fear in this respect has often restrained his otherwise boundless rapacity: thus, in order to protect the reindeer from his attack, the Laplander has only to tie the former to a tree, when the wolf, regarding it merely as a bait to lure him into a trap, which he supposes is prepared for him, avoids it. A handkerchief tied to a tree, or a bladder distended with air and blown about in the wind, is sufficient to keep a whole pack of wolves at a distance.

The wolf would seem to be the traditional enemy of the horse, and the latter always shows the keenest apprehension and the most terrible alarm when in the neighbour-



WOLF-HUNT IN THE NORTH OF EUROPE.



hood of the former. If pursued by a wolf, he puts forth all his powers of speed and endurance. The race does not always end in his favour, for there is a peculiar slouching, tireless movement in the wolf's gallop which carries him, with apparently little exertion, over leagues of ground. Byron describes it in graphic language, when recording the escape of Mazeppa, a Polish nobleman:—


“ We rustled through the leaves like wind,
Left shrubs, and trees, and wolves behind.
By night I heard them on the track:
Their troop came hard upon our back,
*With their long gallop, which can tire
The hound's deep hate and hunter's fire.*
Where'er we flew they followed on,
Nor left us with the morning sun:
Behind I saw them, scarce a rood,
At daybreak winding through the wood;
And through the night had heard their feet,
Their *stealing, rustling* step repeat.”

Now that I have spoken of the bear, the reindeer, the fox, the dog, and the wolf, I have named nearly all the large animals which frequent the Polar Regions of America. I have not, however, exhausted all the *quadrupeds*. Of course, in a climate so rigorous, and in lands which for nine months of the year are covered with snow, they cannot be numerous; while some species, such as the Rats, do not need any particular description. Scanty as is the vegetation, the Arctic Hare, however, contrives to find abundant food, and prospers and multiplies. In the long dreary winter she dwells in her cosy burrow beneath the snow, which, as it falls, she presses backward and forward by the movement of her body, so as always to preserve a small space between it and her furry body. By degrees the silvery flakes are wrought into a kind of pavilion, or

"domed chamber," which completely encloses her, except where a tiny opening is made by her warm breath, and kept as a channel for the admission of fresh air. However needful this aperture may be to her comfort, it leads also to her destruction—the scent escaping from it indicating her hiding-place to the hunter's dogs.

The Arctic hare squats in crevices or under large stones, and there builds about her the snowy dome we have described. She is a beautiful little creature, as white as swan's-down, with a crescent of black marking the ear-tips. Her food is the bark and catkins of the willow; and her structure and habits enable her to penetrate the snow-drifts, when the willow fails her, and nibble the mosses and lichens which grow beneath them. The average weight of an Arctic hare is about nine pounds.

The Arctic Regions support a considerable number of those ubiquitous creatures, the smaller rodents. Chief among these are the lemmings, which vary in the different species from the size of a rat to that of a mouse. They feed on grass and lichens, forming long burrows beneath the snow in search of the latter, where they are hunted by the ermine and fox, of which they form the principal food. At rare intervals the lemmings appear in enormous numbers, and move onward like an army of locusts, devouring everything green that comes in their way. These mysterious migrations have been especially observed in the Norwegian lemming, which at long intervals marches, from no one knows where, in countless hordes towards the sea, on reaching which they enter the water and



perish. An English resident in Norway, who had opportunities of observing the lemmings as they went out to perish like the hosts of Pharaoh, states that on calm mornings a lake in his neighbourhood, a mile in width, was often thickly studded with swimming lemmings, every head pointing westward towards the ocean. When the least wind ruffled the surface of the water, every swimmer was drowned ; and never, he says, " did frailer barks tempt a more treacherous sea, as the wind swept daily down the valley and wrecked all who were then afloat." In spite, however, of the lakes they have to cross, and the attacks of wolves, foxes, and dogs, as well as of man himself, to which they are constantly subjected, still, says the same writer, " a vast multitude plunges into the Atlantic Ocean on the first calm day, and perishes with its front still pointing westward. No faint heart lingers on the way, and no survivor returns to the mountains."

Like the Arctic fox, the Polar lemming becomes whitish in winter. Sir John Ross kept one in his cabin for several months in winter, during which it was seen to retain its summer fur. Surprised at this, he tried the effect of exposing it to the outside cold, and after having been subjected, for over twenty-four hours, to a temperature twenty degrees below zero, the fur on its cheeks and part of the shoulder became white. Further exposure during the five succeeding days produced whiteness on every part of the fur except a dark saddle-like mark across the shoulders. This experiment would seem to show that it is merely the colour of the fur, and not the fur itself, which is changed in those Arctic animals that are white only in winter.

Oxen of one species or another, domesticated or wild, occur in all parts of the habitable globe, and are of the greatest service to mankind both as beasts of burden and as supplying an important article of food. The Musk Ox is the species which shares with the Eskimo those high northern latitudes, where lichens take the place of grass and form its staple food, and where it in turn supplies the inhabitants of those regions with a considerable portion of their animal nourishment. Its flesh, when cooked, is perhaps less palatable than that of any other member of the ox tribe, owing to the musky flavour it possesses, and to which the creature owes its name. If skinned and cleaned immediately after being killed, the flesh, according to Sir George Nares, is generally free from taint; but if the operation be deferred, even though it only be for a few hours, it becomes almost uneatable, owing to its strong musky flavour. The after consequences of a hearty meal of this tainted meat are by no means agreeable, the musky flavour remaining in the mouth for a whole day, accompanied generally with a severe headache.

The musk ox resembles in size our Highland cattle, and is covered with long, soft hair, which, reaching down past the middle of its legs, makes these members look exceedingly short. This hair is very fine, and, when manufactured into cloth, is said to equal the finest silk; sufficient of it, however, cannot be obtained to give it any commercial value. It owes its curious appearance to the position and form of its horns. These spring from the centre of the forehead, which they are broad enough almost completely to cover, and then grow downwards between the eye and ear be-




MUSK OX.

fore making their final curve upwards. At one time the musk ox roamed over the greater part of Europe, Northern Asia, and America, as is shown by the abundant remains of it scattered over the whole of this wide area; but this must have been at a time when a much colder climate prevailed in those regions than now, the advent of warmer conditions having been the signal for the withdrawal of the musk ox to the high latitude to which it is now confined. It occurs chiefly in Melville Island, and in neighbouring continental regions, although it is absent from Greenland and Siberia. They prefer rocky to wooded ground, where they live, like the reindeer, on the lichens which cover the stones. They are swift runners, and climb with a nimbleness more like that of the Alpine chamois than of

an ox. One, which Richardson was pursuing, scaled a lofty sand-cliff, so steep that he and his party had to climb on hands and knees in order to continue the chase. Musk oxen generally assemble in herds of from twenty to thirty; and when there are several bulls in the herd, the former engage in deadly battles with each other until a single victor is left, who is thereafter acknowledged by the whole herd as its leader. Unaccustomed to fire-arms, when they do not see the hunter they mistake the report of his gun for thunder, and "forming themselves," says Richardson, "into a group, crowd nearer and nearer together as their companions fall around them; but should they discover their enemy, by sight or by their sense of smell, which is very acute, the whole herd seek for safety by instant flight. The bulls, however, are very irascible, and, particularly when wounded, will often attack the hunter and endanger his life, unless he possesses both activity and presence of mind. The Eskimos, who are well accustomed to the pursuit of this animal, sometimes turn its irritable disposition to good account; for an expert hunter, having provoked a bull to attack him, wheels round it more quickly than it can turn, and by repeated stabs in the belly puts an end to its life."

Although elephants at the present day inhabit only the warmer regions of the earth's surface, and are totally incapable of enduring Arctic conditions, yet such has not always been the case; nor is it necessary to go very far back in the history of our globe to find a time when the northern regions were the chosen home of more than one



species of those huge proboscideans. These are now totally extinct, but their remains occur in such abundance over an enormous extent of the Northern Hemisphere that their tusks alone, strewed over the plains of Siberia, form an important article of commerce, and supply the great bulk of the ivory which is used throughout the Russian Empire. The Mammoth, as this Arctic elephant is called, was a huge creature, larger than either of the species now existing, and, unlike them, was covered with a thick, shaggy coat of hair and wool, impenetrable to rain or cold. Its tusks have been found measuring nine feet in length, and these are curved so as almost to form a semi-circle. What length of time may have elapsed since the mammoth ceased to be, no one can tell, but it is not so remote that traditions of it are not to be found in at least some of the countries it inhabited. Those traditions of the North American Indians regarding a huge animal with a snout like an arm evidently refer to such a creature, as do the references in the ancient records of the Chinese to an animal living in the extreme north shaped like a rat, but as large as an elephant, and yielding excellent ivory. Still more important evidence of its having flourished in comparatively recent times was furnished by the discovery, in 1799, by a Tongause fisherman, of an entire carcass of the mammoth. While plying his vocation on the shores of the frozen sea, at the mouth of the Lena, the fisherman observed a shapeless mass, almost enveloped in ice, of which he could make nothing. Next year still more of it was exposed through the melting of the surrounding ice, without the fisherman being able to discover what it was.

During the following summer, one of the tusks and an entire side of the creature were laid bare. It was not, however, till the fifth year after its first discovery that the animal, no longer held in its envelope of ice, became detached from the cliff and came down with a crash on a sand-bank beneath. The fisherman then extracted the tusks, which measured nine and a half feet long, and weighed three hundred and sixty pounds, and sold them at Jakutsk for fifty roubles. Two years after, this specimen was visited by an Englishman resident in St. Petersburg, who found it much mutilated. The natives had cut off large portions of the flesh to feed their dogs with ; and the wild, carnivorous animals of the neighbourhood—the wolves, Arctic foxes, and dogs—had also partaken largely of this huge store of preserved meat. The skeleton, however, was almost entire, and portions of it were still held together by ligament and skin ; the latter was covered with long hair and reddish wool, and so much of this covering still remained that ten men could scarcely carry it. The pupil of one of the eyes, as well as one of the ears, still remained. The skeleton was put carefully together, the tusks being repurchased from Jakutsk, and the whole was bought by the Emperor of Russia, who placed it in the museum of the St. Petersburg Academy. Several other specimens, with the flesh more or less preserved, have been found enclosed in ice along the northern coast of Siberia.

All parts of the Polar World are not so barren as those which we have hitherto been considering. Kamtchatka,

for example, though lying within the Arctic Zone, has its green valleys and waving woods. Animal life is also more abundant and varied; and particularly is this the case with the fur-producing animals, which supply the hunters of Kamtchatka and Siberia with the objects of their chase and the precious staples of their commerce. Rich sable furs; ermine furs of snowy whiteness; fiery-fox furs, glowing like the flame; silver-fox furs, of a lustrous gray; soft and glossy sea-otter furs,—all these reward their enterprise and endurance. Alaska and the Aleutian Islands may also be included in the fur-producing districts.

In the dense recesses of the untrodden forests, and near the banks of the lonely-flowing rivers, the Sable loves to make its burrow; or, collecting withered leaves and dry grass, it builds its nest in the hollow of a venerable tree. Here, during the summer time, it watches and waits for the furtive hare, or, in winter, feeds on the wild berries that cluster abundantly all around its retreat. It also hunts on the ground for mice, which, along with shrews and moles, form its principal sustenance. It is said also to eat toads, frogs, lizards, and fish. Although it is killed in enormous numbers for the sake of its fur, it does not appear to diminish in numbers, at least in the uninhabited parts of North America. This is probably due to its extreme shyness, which causes it to disappear at once from a district on the approach of man, and also to the great number of its young. It has also been observed that periodically the sable almost wholly disappears from localities where it usually abounds, going no one knows where; but at such times, when it is at the lowest ebb in point of

numbers, it has been found that the sable will scarcely bite at all at the bait of the traps.

Sometimes it ensconces itself among the foliage of a tree, and if an unwary bird perches on a contiguous branch,



THE SABLE.

with one leap it seizes its fluttering victim. It is a destructive and sanguinary animal, frequently killing its prey for the mere sake of drinking its blood, and leaving the flesh untouched.

But it is as crafty as it is cruel, and the sable-hunter obtains but scant reward for the hardships he endures and

the dangers he confronts. Its fur is in best condition in winter time; and the hunter therefore is forced to traverse snowy wastes, where his path, perhaps, may be obliterated by sudden storms, or he may wander into a snow-drift and miserably perish. Hunger and thirst he must bear contentedly; and his bold heart must not be appalled by the dreary loneliness of the regions into which he ventures. Nor must he shrink before disappointment. The cautious sable is not easily deceived; and if for every eight or ten traps he sets he secures one capture, the hunter has good reason to rejoice at his success.

The trap is so constructed as to detain the animal without injuring its fur. But sometimes the hunter carefully tracks the animal to its den, over the entrance to which he throws a net. He then "smokes out" the inhabitant of the burrow, and in the effort it makes to escape runs right into the net.

The sable is about eighteen inches long, exclusive of its bushy tail. Its fur is of a rich brown colour, slightly tinged about the neck with gray.

The Ermine, or Stoat, ranges much further south than the sable ever ventures, and is not uncommon in our own islands. In the north it is known as the ermine, whose snow-white fur is part of the ceremonial robes of kings and princes. In the south it is called the stoat. Like many of the fur-clad animals, its garb in winter is adapted to the prevailing character of the landscape, and the further north we go, the whiter do we find the ermine's coat. In summer time, however, its attire is of a reddish-brown

colour, merging into gray on the limbs and lower part of the body. The tip of the tail at all times preserves a jetty tint.

What is the object of this change of colour?

Anciently it was supposed to be intended to protect the animal against its enemies, or enable it to approach its prey unseen; for when the snow is on the ground the snow-white ermine is not easily detected. And we are not sure but that this *is* really one of the reasons. Some modern writers, however, are of opinion that it is a safeguard against the extreme cold; and it is known that black substances part with their stock of heat more readily than do white. Further: it would seem to be the natural consequence, to some extent, of the wintry atmosphere, which blanches everything exposed to it, and makes excessive demands on the vital economy. It is to be observed that the stoat of England and Ireland is very seldom of a pure white, or even of a creamy colour, as is the case with the ermine of Arctic Siberia, although it is often so in Scottish specimens.

The stoat is a merciless depredator, and preys upon birds and their eggs, young hares and rabbits, rats and mice. Birds' nests of all kinds, says a pleasant writer, are plundered by this "incorrigible poacher;" and it matters little however carefully and completely the nest may be hidden, its quick eye and keen nose enable it to discover the wished-for prize. With its sharp claws and strong agile limbs it can climb any tree-trunk, and cling to any branch capable of sustaining the weight of a nest and eggs; while into any crevice accessible to an adult bird it will surely insinuate its flexible body. A stoat nursery was once dis-

covered which contained a mother stoat and her five young ones. In the adjoining larders were carefully stowed away no fewer than five rabbits and four hares. In another provision-store were collected a dozen mice, a young rabbit,



THE ERMINE, OR STOAT.

a young hare, and all that was left of a woodcock,—namely, the feathers and tail.

Notwithstanding its destructive tendencies, and its serious inroads when once it finds its way into the poultry-yard, Audubon considers it doubtful whether after all the stoat is not rather a benefactor than an enemy to the farmer, “ridding his granaries and fields of many depre-

dators on the product of his labours, that would devour ten times the value of the poultry and eggs which at long and uncertain intervals it occasionally destroys. A mission appears to have been assigned to it by Providence to lessen the rapidly multiplying number of mice of various species and the smaller rodentia. Wherever a stoat has taken up its residence, the mice in its vicinity for half a mile round have been found rapidly to diminish in number. Their active little enemy is able to force its thin vermiform body into the burrows; it follows them to the end of their galleries, and destroys whole families. It enters every hole under stumps, logs, stone-heaps, and fences, and evidences of its bloody deeds are seen in the mutilated remains of the mice scattered in the snow." The ermine sometimes domesticates itself in the huts of the fur-traders, where it takes the place of the cat in hunting mice during the night; for like the majority of predatory animals, it is somewhat nocturnal in its habits. If it thus resembles a cat in preying by night, it closely resembles a kitten in its playfulness. According to Bell, it may often be seen darting off into the most extravagant antics, running backward and forward at the top of its speed, rolling over and over, performing somersaults in the air, and ending with a series of leaps which few creatures of its size could accomplish. Although these antics would appear to have no other purpose than the pleasure the ermine has in performing them, yet as they are often gone through when the animal is in serious pursuit of its prey, it is probable that in such cases they are of real service in allaying the suspicion of its intended victim.

The Mink is a weasel distributed over the greater part of North America, occurring as far north as the mouth of the Mackenzie River. It is the only truly amphibious species of weasel, swimming in the water like an otter, and feeding on fish, crustacea, and molluscs. It does not, however, wholly confine itself to such a diet, but shows its close connection with the purely terrestrial species by destroying rats, mice, and poultry. It often annoys the hunter by running off with the game before he has an opportunity of bagging it. It is readily tamed, and, barring occasional fits of temper, when no one is safe from its teeth, it is docile and gentle. For this reason it has been at least semi-domesticated in America, where it takes the place of the European ferret as a vermin-killer. When irritated or hurt it emits a fetid odour second only in nauseousness to that of the skunk. Its fur is of considerable value, and on this account it is trapped in large numbers. Its tenacity of life is very remarkable, the mink having been known to live for many hours under the pressure of a log which had completely flattened the middle of its body, and even then show fight on being approached.

The Martens, which are also much valued for their skins, can scarcely be classed among the inhabitants of the Frigid Zone; but the sly and voracious Wolverine, or Glutton, may be included amongst them on account of the high latitude it reaches in Siberia. It is found not only in Siberia, but also in Northern Europe, and over a considerable extent of North America, where it frequents the

forest wildernesses, and hunts the beaver with curious ferocity and persistence.

As I shall have a good deal to say about this remarkable animal, I must endeavour to describe it.



WOLVERINE, OR GLUTTON.

As its name indicates, it has a wolfish appetite; but in appearance it has some resemblance to a young bear. Its general colour is a brownish-black; the muzzle is black up to the eyebrows, but the space between the eyes is blackish-

brown. On the sides the brown has a warm reddish tinge. The paws, which are abnormally broad and strong, are jet black, and so afford a vivid contrast to the white claws. Its eyes are small, and of a dark brown; its teeth white, keen, and strong.

During the winter months the wolverine obtains a livelihood by stealthily following up the trapper and robbing his traps of their contents. The injury inflicted by his depredations is so great that the Indians have named him *Kekwaharkess*, or the "Evil One." With ceaseless perseverance he seeks day and night the trail of man, and when once he has found it, follows it up without let or hindrance. On coming to a lake, where the track across its frozen surface is generally covered with snow, he gallops round its borders continuously until he discovers the point where it once more enters the forest. And at length he arrives at one of the traps. He is shrewd enough to avoid the door, and tearing open an entrance at the back, he seizes the bait with impunity; or if an animal has been caught in it, drags it forth, mauls it, and carries it away to some covert in the underwood, or climbs with it to the summit of a lofty pine. When pressed by hunger he devours it on the spot. In this manner, according to the authors of "*The North-West Passage by Land*," he plays havoc with a whole series of traps; so that when once a wolverine has taken possession of a "trapping-walk," the trapper's only hope of success lies in changing ground and building a fresh lot of traps, trusting to secure a few furs before his persevering enemy has found him out.

The trappers relate the most wonderful stories of the

cunning of this animal; and when allowance has been made for a natural exaggeration, it is certain that he displays an extraordinary intelligence. He is not easily caught, you may be sure. Sometimes one is poisoned, or caught in a steel trap; but so great is his strength, as well as his cunning, that a trap which will hold a wolf is not proof against a wolverine. The fox or the mink when caught will get free by amputating the imprisoned limb; but the wolverine assists to carry the trap with his mouth, and thus he limps along until he reaches a lake or river, where, free from the impediments offered by trees and fallen timber, he can move forward with speed. When he has reached a spot at what he considers to be a safe distance from his pursuers, he sets to work to release his imprisoned member; and is so patient and so dexterous that he generally succeeds.

Sometimes the trapper brings down the plunderer with a gun, which he places resting on a peculiarly dainty bait, and with a string running from the bait to the trigger. In seizing the bait, the animal pulls the string, the trigger acts, and the contents of the loaded gun are lodged in the depredator's body. But it is said that a wolverine of more than ordinary intelligence will detect the snare, and gnaw in two the cord communicating with the trigger before he ventures to touch the bait.

A trapper who had frequently been baffled by the creature's wiles, bethought himself on one occasion of planting the gun in a tree, with the muzzle pointing vertically downwards upon the bait. This he suspended from a branch at such a height that the wolverine could




not get at it without jumping. The trapper was clever, but his enemy was cleverer still. Usually the wolverine is as curious as a Polar bear, and anything hung out of reach will puzzle and excite him greatly until he has investigated it. But he mastered his curiosity in the present instance. Carefully did he climb the tree, and carefully did he gnaw the cords by which the gun was fastened in its place. Nor till the latter fell harmlessly to the ground did he make any effort to possess the bait!

Lord Milton relates that he and his party having set a number of traps, were sadly disappointed, when they came to examine them, by finding that each had been successively rifled by a wolverine. He had attacked each in succession, broken it open at the back, taken out the bait, and when an animal had been caught, had carried it off and devoured it. All they obtained as the reward of their labour was—the tails of ten martens!

“The forest in which we hunted,” he says, “commenced on the side of a large lake, stretching away to the north apparently indefinitely. This was broken only by numerous lakes and swamps, and patches of timber which had been burned. The lakes are always sought by the trapper, not only because they enable him to travel more rapidly, and penetrate further into the less hunted regions, but also because the edges of the lakes and the portages between them are favourite haunts of the fox, the fisher, and the mink. On one of these lakes a curious circumstance was observed. The lake was about half a mile in length, and of nearly equal breadth, but of no great depth. The water had seemingly frozen to the bottom, except at one

end, where a spring bubbled up, and a hole about a yard in diameter existed in the covering of ice, which was there only a few inches thick. The water in this hole was crowded with myriads of small fish, most of them not much larger than a man's finger, and so closely packed that they could not move freely. On thrusting in an arm, it seemed like plunging it into a mass of thick stir-about. The snow was beaten down all round, hard and level as a road, by the numbers of animals which flocked to the Lenten feast. Tracks converged from every side. Here were the footprints of the cross or silver fox, delicately impressed in the snow, as he trotted daintily along with light and airy tread; the rough marks of the clumsier fisher; the clear, sharply-defined track of the active mink; and the great coarse trail of the ever-galloping, ubiquitous wolverine. Scores of crows perched on the trees around, sleepily digesting their frequent meals."

In such a scene as this the traps were once more set; and in some of them poisoned baits were introduced instead of the ordinary delicacies, these being dotted here and there along the line. On the following day the hunters set forth to collect their booty. But the wolverine had been beforehand with them. Every trap was demolished, every bait was removed; but the poisoned baits had been bitten in two, and then—contemptuously rejected! The baits had been carefully prepared, the strychnine being poured through a small hole into the centre of the meat, so that when frozen the poisoned baits in appearance exactly resembled the harmless ones. But it seemed as if the wary creature had had some suspicion of poison, and



had bitten each morsel in two and tasted it before satisfying his appetite. As the baits had been made very small, it was expected that the wolverine, if he found out the traps, would have swallowed them whole.

The wolverine has a remarkable propensity for stealing and hiding, even although the stolen articles be of no use whatever to it. A recent writer gives the following amusing instance of the length to which this propensity goes:—"The desire for accumulating property seems so deeply implanted in this animal that like the tame raven it does not appear to care much what it steals, so that it can exercise its favourite propensity to commit mischief. An instance occurred within my own knowledge in which a hunter and his family, having left their lodge unguarded during their absence, on their return found it completely gutted; the walls were there, but nothing else. Blankets, guns, kettles, axes, canes, knives, and all the other paraphernalia of a trapper's tent had vanished, and the tracks left by the beast showed who had been the thief. The family set to work, and by carefully following up all its paths, recovered, with some trifling exceptions, the whole of the lost property."

Closely allied to the weasels, and equally valuable for their furs, are the two species of North American otters—the one an inhabitant of rivers and fresh-water lakes, the other of the sea. The Canadian river Otter bears considerable resemblance to the European species, only it is much larger; they also resemble each other closely in the nature of their food and in their habits. In winter, according to

Sir J. Richardson, it frequents rapids and falls, in order to have the advantage of open water ; and when its usual haunts are frozen, it will travel to great distances over the snow in search of a rapid that has not succumbed to the severity of the weather. If pursued when on this over-land journey, it is said to throw itself on its belly and slide for a considerable distance through the snow. This it does so rapidly, and repeats so often, that it is difficult for the hunter, even although provided with snow-shoes, to overtake it. It also doubles on its track, and dives under the snow in order the better to elude pursuit. When the same traveller was at Great Bear Lake, his party were annoyed by otters robbing their fishing-nets, which were placed under the ice near a piece of open water, the thieves usually carrying off the heads of the fish, and leaving the bodies sticking in the net. The sliding above referred to, although practised when the creature is being hotly pursued, seems also to be indulged in simply for sport. An American observer thus describes it:—"Their favourite sport is sliding, and for this purpose in winter the highest ridge of snow is selected, to the top of which the otters scramble, where, lying on the belly, with the fore feet bent backwards, they give themselves an impulse with their hind legs, and swiftly glide head foremost down the declivity, sometimes for the distance of twenty yards. This sport they continue apparently with the keenest enjoyment, until fatigue and hunger induce them to desist." The fondness of the otter for this pastime is turned to account by the trapper for its destruction. They are usually caught in the steel trap which is set on



SEA OTTER.

the slide and completely concealed, care at the same time being taken that all traces of the trapper's presence are obliterated ; he does not even touch the trap with his bare hands, for so acute is the otter's sense of smell, and such its sagacity and caution, that the least taint of man would be sufficient to drive it off. When the ponds are frozen over, the otters are said to make holes in the ice at which they come up to devour their prey ; and here, if the water be not more than a foot deep, the trap can be set on the bottom with every chance of success, for the otter in seeking to reach the surface is almost certain to press its foot against the trap and thus be caught. When taken in this way, under water, it is prevented from gnawing off the imprisoned limb—a means of escape to which it often has recourse when caught on the surface. Like the European otter, the American lives chiefly on fishes, in the capture of which it shows great dexterity. After seizing its prey,

it brings it to the river-bank, and there devours it. Its fur is highly valued, and in 1873 the Hudson Bay Company alone sent eleven thousand skins to London.

The sea otter is about twice the size of the common otter, and weighs from seventy to eighty pounds. It is found along the North Pacific coast, but principally on the shores of the Aleutian Archipelago. Its fur, which is characterized by its gloss and velvetiness, became known to Europeans through Russian traders, who were the first to open up the Aleutian Islands. They found the inhabitants wearing sea-otter garments, which they willingly parted with for a trifle. For some years after the settlement of the Russian traders, the number of sea otters captured annually was enormous. At St. Paul's Island alone two sailors were said to have killed during the first year of its occupation no fewer than five thousand individuals, and one of the traders sent in a single year from Alaska fifteen thousand sea-otter skins, valued then at one million dollars, the result being that in a few years these creatures were well-nigh exterminated throughout Russian America. Otter-hunting being now no longer so profitable was less keenly pursued, the skins taken for many years previous to the cession of that territory to the United States not numbering more than seven hundred annually. Since that time, however, the ground has been wrought by hunting-parties in the thorough manner which characterized it at the outset, so that in 1873 four thousand skins were obtained; and there is every prospect that, unless the government interfere and fix a close time, the supply of these valuable animals will soon again be exhausted.

Sea otters are exceedingly shy, while their powers of hearing and smell are said to be unequalled by any other animal on the North American continent. They will take alarm, says a recent writer, and leave from the effect of a small fire four or five miles to the windward of them; and the footstep of a man must be washed by many tides before its trace ceases to alarm the animal and prevent it from landing, should it approach for that purpose. They are very playful, and are often seen by the hunters lying on their backs in the water and tossing bits of sea-weed from paw to paw, evidently enjoying the fun of keeping them from touching the water. The female sleeps on her back in the water with her young clasped between her fore paws. The latter have never been got to live in captivity, all attempts in this direction being frustrated by the refusal of the young otters to taste food.

The hunting of the otter is invariably attended with severe hardships, the hunters having been known to live in the dead of winter for six weeks at a time without kindling a fire, and with certain winds they never light one, neither do they smoke, nor scatter food refuse on the beach, for fear of driving off their keen-scented prey. Of the various methods adopted by the Aleuts in the capture of the sea otter, the most interesting and exciting is that by *spearing surrounds*. When the sea is not too rough, fifteen or twenty canoes, each containing two men, set out, under the leadership of a chief. They spread themselves out in a long line, and paddle about in the waters where the sea otters usually are found. As soon as one of these is seen—probably it is asleep on the

water—a silent signal makes the discovery known to all the rest, who remain perfectly quiet, not even a splash of an oar being heard. The man who gave the signal then darts towards the animal, which generally takes alarm and dives before the Aleut is near enough to use his spear. The hunter, however, moves on until his canoe is right over the place where the otter disappeared; and this now forms the centre around which the other boats scatter in a circle half a mile wide, waiting for the reappearance of the otter on the surface, which usually takes place in about fifteen minutes. No sooner does this happen than the nearest hunter darts forward in the same manner as his predecessor, while all the others throw up their spears and shout so as to cause the otter to dive again as quickly as possible, thus giving it scarcely a moment to recover its breath. This operation is repeated sometimes for two or three hours, until the otter, says Elliot, "from interrupted respiration, becomes so filled with air or gases that he cannot sink, and becomes at once an easy victim." Another mode of capturing these animals is by *clubbing*, which is only practised during the gales of winter. Then the noise of the "roaring waters" is sufficient to drown that made by the stealthy movements of the intrepid hunter, who, with a heavy wooden club, despatches the otters bewildered by the storm.


In the survey which I have taken of the Animal Life of the Frigid Zone—of those seas and lands which lie within the so-called Arctic Circle—every reader will be conscious of some remarkable omissions. These I now hasten to

supply. The play of "Hamlet" with the character of Hamlet left out would be interesting, and even complete, compared with an account of the Polar World which allotted no space to the whale, the seal, and the walrus. Round the first-named of these such an atmosphere of romance and poetry prevails, that probably it is the best known of all the larger animals. The Whale! Simply to mention it calls up before the mind's eye a vision of rolling seas and ice-bound coasts—of the enterprise and daring of the mariners who venture in pursuit of it—of the terrible catastrophes which sometimes occur when the ocean-leviathan is roused to wrath. Who has not read of boats dashed to pieces or hurled into the air by one blow of its mighty tail? Who has not read of ships that, in the course of the fishery, have penetrated too far into the ice-fields, and been crushed by the driving masses?

The whale is popularly called a fish. But fishes are cold-blooded, and the whale is warm-blooded. Fishes breathe through the external organs which we call gills; the whale respire, as all mammals respire, by means of internal lungs. The whale has a heart with four chambers, which fishes have not. Moreover, it produces its young alive, and suckles them at its breasts; hence it is properly called a *mammal*. But as it lives always in the sea, has a tail (though placed in a different position from that of fishes), and as its fore limbs are much more like fins than legs, no doubt it will continue to be commonly spoken of as a fish. It has a smooth, thick, leathery skin; and, underneath this, a dense layer of fatty substance called blubber, which surrounds the whole body, and protects it

against the utmost extremity of cold. When boiled, the blubber yields a very valuable oil ; and it is for this oil, and the whalebone or " baleen " which lines the huge jaws of the monstrous animal, that man undertakes its pursuit. With characteristic intrepidity he hunts it through ice and tempest, and defies the dangers of the storm-beaten seas. The whale itself is of a meek, sluggish, inoffensive disposition ; and in the warfare which he carries on against it, man is almost always the aggressor. Occasionally, however, he encounters a terrible resistance, and his life becomes the forfeit of his daring.

The Greenland or right whale measures from fifty to seventy feet in length. The weight of such a monster will be about seventy tons ; and of these seventy tons, there will be thirty in oil. The bones of the head, fins, and tail, which are also valuable, weigh from eight to ten tons. The blubber varies from eight to twenty inches in thickness. The shape of the body is cylindrical and conical. About a third of the whole is occupied by the enormous head ; and the thick lips, nearly twenty feet long, enclose a cavity capable of receiving a ship's jolly-boat fully manned. The tail is not more than four or five feet long ; but then it is twenty feet broad. As I have said, its position is unlike that of the tail in most fishes, for it lies perfectly flat and horizontal. It consists of two masses of muscles, covered by a thin stratum of blubber, and is so immensely powerful that a single stroke will hurl a large boat with all its crew into the air, or crash through its timbers as if they were so much paper. How grand yet how awful is the sight when the ocean-giant places himself with his huge





THE GREENLAND WHALE.



head downwards, and, rearing the tail on high, lashes the waters into a cloud of spray and foam! The vapour darkens the air, and, afar off, men who hear the violent beating think it is the sound of a terrible tempest.

Next I must notice the "swimming-paws," flippers, or fins, which are placed immediately behind the small but quick and intelligent eyes. Each fin is nine feet in length, enclosed in membranes of great elasticity, and furnished with all the bones and joints of the human hand. Though called swimming-paws, it is doubtful whether the animal makes use of them to assist its progression in the water. Probably its motion is produced entirely by the tail, as when it is swimming these organs appear to lie flat and quiescent on the surface of the water. They are useful, however, in *guiding* its course, and act as a rudder.

A curious feature in the economy of the whale is the blow-holes, or spiracles, two in number, situated nearly on the crown of the head. Through these the animal partly breathes; and when beneath the surface, the act of respiration causes them to throw up a considerable quantity of water. At other times they emit only columns of vapour, which are visible at a great distance. The sound produced by the animal on these occasions is called its "blowing;" it resembles the discharge of a cannon, and often directs the whaler to his prey.

The reader will naturally suppose that this mighty creature feeds upon the large fish which tenant the seas; that its diet and its appetite are in proportion to its bulk and strength. Such, however, is not the case; and, in fact, notwithstanding the immense capacity of its mouth,

its throat or gullet is so small that it could not possibly swallow any such food. It lives upon the tiny molluscs, crustaceans, and other marine creatures which teem and multiply in the Northern Seas; upon the medusæ and animalcules generally which abound in these localities, and by their numbers communicate to the water a peculiar olive-green tint.

The Greenland whale is a gregarious animal, being generally found in small schools of three or four, and in much larger numbers when migrating from one part of the ocean to another. Like other cetaceans it generally travels in a direction contrary to that of the wind, and its usual rate of progress when feeding is about four miles an hour; when wounded, however, it moves with incredible rapidity. The female has a single cub at a time, which she suckles in the water, lying for this purpose on her side. She has a strong affection for her young, and although at other times timid and harmless, she becomes fierce and dangerous when her cub is threatened. Dr. R. Brown states that on one occasion he observed a female, when the boats were approaching, take her cub under one fin and swim off by means of the other. Whales can remain much longer under the water than seals, the Greenland species usually remaining half-an-hour before coming to the surface to breathe, while the cubs can stay below for three quarters of an hour. There is no end of stories about whales having remained for hours under the water, and the naturalist and traveller referred to above states that he has witnessed such cases, but in every instance the whale when it reached *the surface* was dead. Tortured by the harpoon, they dive

with tremendous impetus towards the bottom of the sea, against which they sometimes strike their heads with such force as completely to stun them, and before recovering they get drowned. Whales are also said to spend a considerable portion of their time asleep on the surface, and such is the soundness of their repose that occasionally they are struck when in this condition.

There are whales—and whales. The Razor-back, as sailors call it, is considerably larger than the common Greenland whale; that is, it exceeds the latter in length; and though its girth is less, it is on the whole a larger and more powerful animal. It attains also a greater rate of speed. In an hour it can swim twelve miles; and Scoresby relates that he saw one which had been struck with a harpoon run off 480 fathoms, or 2880 feet, in a minute! An individual of this species, found in Davis Strait, measured one hundred and five feet in length. This whale is more dangerous to the hunters than the ordinary species; for by the extraordinary swiftness of its motion it frequently breaks the line, or compels the sailors to cut it, if they would escape destruction. It is on record that one dragged a boat with its crew into a maze of drifting ice, when the boat was crushed to pieces and all the crew perished. Further: as the razor-back yields only ten or twelve tons of oil, and oil of an inferior quality, its capture is not much desired by the whalers; in fact, it is never attacked now unless by mistake or through ignorance. A recent writer states that he once saw a razor-back floating dead in Davis Strait, to which part of the crew, supposing it to be the right whale, rowed, but only to abandon it on

finding that it was a "finner." "They had," he adds, "apparently not been the first, for on its sides were the names of several vessels which had paid it a visit and did not consider it worth the carriage and fire to try out the oil." Its blubber is said to be not unlike soft glue.

Sometimes the rorqual, as it is called, will turn fiercely upon the pursuing boats, and dash them into fragments by repeated strokes of its formidable tail.

Its food is less limited than that of the Greenland whale; it eats various kinds of fish, as well as the molluscs, medusæ, and crustaceans on which the latter satisfies its appetite. In the stomach of a rorqual as many as six hundred large cod-fish have been found, to say nothing of a plentiful reserve of pilchards. In quest of food it frequently follows up the shoals of fish to the British shores, and haunts our most abundant fishing-grounds; where, as it devours enormous quantities of herrings, pilchards, cod, and the like, you may be sure it is no welcome visitor. If it approaches too near the coast, however, it is sometimes stranded by the receding tide, and falls a victim to the fishermen who have suffered by its depredations. One animal thus captured measured ninety-five feet in length, and weighed two hundred and fifty tons! Its breadth was eighteen feet; the length of its head twenty-two feet; and each fin measured twelve feet and a half.

On the Greenland coast is found the Pike Whale, remarkable for the size of its pectoral or breast fins. Like the rorqual, it is partial to a fish dinner! Its oil is described as of very superior quality; but as the adult

animal measures only twenty-five feet, we may dismiss it without further remark as a pigmy among whales.

Among the smaller Cetacea which visit Arctic waters, the Grampus, Ca'ing Whale, and Hump-backed Whale may also be noticed. The Grampus, or Whale-killer, is an inhabitant of Northern seas, although it is occasionally found in the waters of temperate regions. It attains a length of twenty-six feet, and is the most savage and voracious of the whale tribe, being the only one which feeds upon other members of its own order. Next to man, it is the greatest enemy of the Greenland whale, which, in order to escape its persecution, is said to get among the ice, where its tormentor does not choose to follow it. The grampus is consequently detested by the whalers, as its appearance is the signal for the disappearance of the other whales from the neighbourhood. Belugas and seals often run ashore through terror of this hated member of their own kind; and an examination of the contents of its stomach shows how well-founded are their fears. Dr. Eschricht took from the stomach of a single grampus thirteen porpoises and fourteen seals more or less digested, the voracious animal having been choked by the skin of the fifteenth seal, which had got entangled among its teeth. Another naturalist states that he once witnessed a school of white whales driven by whale-killers into a bay near Godhaven, where they were literally torn to pieces; and Dr. Brown mentions a case in which a band of these attacked a white-painted herring-boat in the Western Islands, probably mistaking it for a beluga. The grampus

possesses from twenty to twenty-four strong recurved teeth in each jaw.

The Pilot, or Ca'ing Whale, is the most gregarious of all the cetaceans, occurring usually in herds numbering several hundred individuals, and occasionally in much larger numbers, as many as two thousand having been found thus congregating together. It attains a length of about twenty feet; and from its gregarious habit its appearance is eagerly welcomed by the inhabitants of the shores visited by it. Although a native of the Polar Sea, it migrates annually southward; and it is then occasionally caught in great shoals in the neighbourhood of Iceland and the Faroe Islands. More rarely the Shetlanders are favoured with a visit from these sociable animals; and not many years ago a herd of them entered the Firth of Forth, where they were driven ashore and killed. The appearance of the ca'ing whale off Faroe causes the wildest excitement among the inhabitants, who rush in a body to the shore. Every boat is manned, and provided with a cargo of stones. The improvised fleet then sets out with the object of getting to seaward of the herd; and when this is accomplished, the boats are formed into a semicircle, and connected with each other by means of straw ropes, so as to discourage any of the animals from attempting to break through, for should a single one effect its escape seaward, the whole herd would follow like a flock of sheep, in spite of the most frantic efforts of the islanders. On the other hand, should but one of the whales set the example of making for the shore, the whole herd is soon stranded. To frighten the creatures shorewards they are

pelted with stones; and as soon as they are got into shallow water, the islanders—men, women, and even children, armed with weapons of the most varied description—rush in among and speedily despatch them. In 1846, two thousand and eighty, it is stated, were thus captured within six weeks in Faroe, where its flesh forms an important article of food, and where the oil from its blubber is used for lighting. The flesh is either consumed fresh or is cut into slices and dried. Certain portions of the fat, when hung up for a short time, will keep for years, and is used by the natives as a substitute for bacon. The ca'ing whale's favourite food is cuttle-fish, although it also feeds on cod and ling.

The Hump-backed Whale is an inhabitant of the Arctic Regions in summer only, migrating in winter as far south as the Bermudas. It attains a length of over fifty feet; but being of little value, either for its whalebone or its blubber, it is let alone by European whalers. The Eskimos, however, attack it without harpoon, and kill it readily by stabbing it with their lances. It is one of the most inoffensive and least shy of the whales. "It often," says Professor Lilljeborg, "during calm weather, rests quietly on the surface of the water, sometimes lying on one side beating itself with its pectoral fins, as if trying to rub away something that annoyed it; sometimes it jumps quite out of the water, turns round in the air, and falls on its back, beating itself with its pectorals. It appears at times quite fearless, and swims round about the boats quite near to them, as if they were its comrades."


The Sperm Whale, or Cachalot, belongs chiefly to the

Southern seas; but as it is sometimes met with in Northern waters, it may be noticed here in company with other members of the same great family. It derives its popular name from the valuable substance which it yields—spermaceti—the uses of which are so many and so important. This spermaceti is found in a liquid oily state in two great cavities inside of the enormous skull. When the whale is killed, and towed alongside the whaling-vessel, the head is cut off, a large hole cut in the top, and the oily matter extracted by means of buckets. On exposure to the air it hardens, and turns perfectly white.

An excellent oil is also obtained from the blubber of the cachalot, but not in any great quantity, the blubber not being so thick as in the Greenland whale. Again: it furnishes the aromatic substance called ambergris, formerly much used both in perfumery and medicine.

The cachalot is one of the largest of the whales; an adult male, or "old bull," as the whalers call it, measuring from seventy to eighty feet in length, and thirty feet in circumference. The head is of colossal proportions, being almost equal to one-third of the total length. Its back has a peculiar form, with a rather large hump upon it, which diminishes towards the tail. It has no teeth in the upper jaw, but a long row on each side of the lower.

The cachalot sometimes wanders into the Atlantic Ocean, and a stray individual will entangle itself in the shallow waters of the Bermudas. Unable to discover the channel through which it entered, it is caught like a fish in a net, and becomes the lawful spoil of the fortunate islanders, who, as soon as they sight the helpless monster,



launch their boats and prepare for its capture. Then with gun, and lance, and pike, or with any destructive implement at hand, they smite it and wound it, and, in their daring ardour, leap on its huge back, and with all their force drive weapon after weapon into its quivering flesh. The issue cannot be doubtful. The whale dies, and amid loud shouts of triumph its carcass is hauled ashore, to be divided equally among the captors. These retain for themselves the oil and ivory, but give up the flesh for the general benefit of the community.

Usually the cachalot appears in large herds or “schools,” consisting of several hundred females and young males, under the charge of some gigantic adults, called “schoolmasters,” who exercise a strict supervision over their flock, and permit no breaches of discipline. Occasionally, a schoolmaster quits the herd and goes in search of food. Relieved from its duty, it appears to grow careless and indifferent, and thus it often falls a victim to the whalers—permitting them to approach so near as to use their weapons with deadly effect. Not seldom, however, its warlike disposition is suddenly aroused, and then it becomes an opponent whom even the bravest seamen tremble to engage. It plies its huge tail and its monstrous jaws with almost incredible violence. It is related that a cachalot drove its lower jaw right through the timbers of a stout whaling-boat; and another, on one occasion, destroyed nine boats successively. When this giant of the ocean was finally killed, its captors discovered in its carcass an arsenal of harpoons and spears belonging to different ships.

An American ship, the *Essex*, was destroyed by a

cachalot, which—mistaking it, we suppose, for a rival whale—dashed headlong at it, and striking the ship's side near the bow, crushed the thick timbers as if they were so many sheets of paper. At the time most of the crew were away in the boats pursuing a whale; and when they returned, great was their surprise and terror to find their vessel sinking. Scarcely sufficient time was allowed them to take on board a small supply of provisions and fresh water. Then they steered for the coast of Peru; a long and weary voyage, in the course of which their little store was exhausted. After enduring terrible agonies, three survivors were picked up by a passing vessel, as they drifted on the waters in their frail, wave-worn boat. They were senseless when happily rescued, and must soon have shared the fate of their unfortunate companions.

It is fortunate for the whale-hunter that, notwithstanding its immense size and strength, the cachalot is exceedingly timid. Any strange or unaccustomed object excites its alarm, and it is then observed to perform the most curious movements indicative of its surprise and dread. When wounded, it darts away at a tremendous pace, towing a boat along at the rate of twelve miles an hour, and proceeding with an undulating up-and-down movement, the alternate upward and downward strokes of the tail causing a similar upward and downward action of the huge head.

Its "spoutings" are audible at a distance of several miles. It generally lies still while in the act of respiration, but sometimes glides slowly along the surface. As the animal rises from the "dark blue depths" its hump is

first observed ; then, at a distance of forty or fifty feet, its enormous snout rises above the water, ejecting for fully three seconds a continuous stream of watery vapour.

At such a moment, with its colossal bulk extended on the wave, it reminds the spectator of the picture so graphically painted in a few words by Milton :—

“ There leviathan,
Hugest of living creatures, on the deep
Stretched like a promontory, sleeps or swims,
And seems a moving land, and at his gills
Draws in, and at his trunk spouts out, a sea ; ”

or that other picture from the same master-hand, which shows how strong an impression the ocean-monster had made on the poet's imagination :—

“ That sea-beast,
Leviathan, which God of all his works
Created hugest that swim the ocean-stream :
Him, haply, lumbering on the Norway foam,
The pilot of some small night-foundered skiff,
Deeming some island, oft, as seamen tell,
With fix'd anchor in his scaly rind
Moors by his side under the lee, while night
Invests the sea, and wish'd morn delays.”

The large whales occasionally visit the British coasts ; but apparently not so frequently as they did long ago. The right whale is said to have been common in the English Channel during the reign of Edward III. ; and there is an old feudal law whereby every whale caught on the English coast falls to be divided between the king and queen, the former getting the head and the latter the tail,—the reason assigned for the queen's portion being that her wardrobe might be furnished with whale-bone.

Many years ago a whale appeared off Weymouth, and one of the fishermen was induced to try and capture it in a new seine net which he had. No sooner was this shot round the whale than, feeling something strange, it charged against the net, and with such impetuosity as to drag the boat and its occupant after it. After plunging about for some time, and thus getting well enveloped in the net, the whale suddenly dived, and forced the fisherman to abandon both it and the fishing-gear attached. A few days after, however, a whale was observed by a coast-guardsmen stranded among the rocks, and on closer inspection it was seen to be surrounded by the meshes of a net, which proved to be the lost property of the madcap fisherman of Weymouth, who claimed and got possession of the valuable prize.

The sperm whale has been known to occur more than once on the British coasts; and Frank Buckland tells how a French vessel nearly got into trouble with one of these whales at the mouth of the Thames. As the vessel was passing down that river, the captain observed a huge black object on a sand-bank near the Nore, and sending off a boat's crew to make a closer inspection, it was found to be the body of a huge sperm whale apparently nearly dead. Delighted with their prize, the sailors attached it to the ship by means of a thick rope tied round its tail, while with the returning tide the leviathan floated and the ship set sail, towing its prize behind it. Its destination was Calais; and the captain anticipated no difficulty in executing his task. He had, reckoned, however, without the sperm, which no sooner found itself once more afloat

than it began to give token of its renewed life in the most energetic manner, and with an utter disregard for the welfare of the ship to which it was physically attached. So much was this the case that the Frenchmen were glad at last to cut the rope, when the whale again made off towards the mouth of the Thames, carrying its curious caudal appendage along with it. Some days after, the same sperm, having ventured incautiously into Whitstable Bay, was driven into shallow water and despatched.

Something must now be said about the Whale-fishery. If our space permitted, we could crowd page after page with stories of "moving accidents," deeds of enterprise, hair-breadth escapes, and romantic episodes; for the whale-fishery is no easy occupation, but one which calls into play all the seaman's skill, endurance, and courage. The ships engaged in the fishery are built for the purpose; stout, substantial vessels, strengthened within and without by a liberal use of timber and iron; and ranging from three hundred to four hundred and fifty tons burden. Formerly none but sailing-vessels were employed; but these are rapidly giving place to screw-steamers, which can exercise a greater force in pushing through the ice.

Each ship carries about fifty-four men,—including captain or master, mate, second mate, doctor, engineers, and harpooners. She has also six to eight boats; a boat's crew consisting of six men—five to row, and one to steer. The harpooner is in charge of the boat, and pulls the bow-oar. It is his duty to strike the "fish." The "line-manager" pulls the stroke-oar; and it is his province,

HAND-
HARPOON.

along with the steerer, to see that the lines are all coiled away clear, and, after a fish has been struck, to watch them while running out.

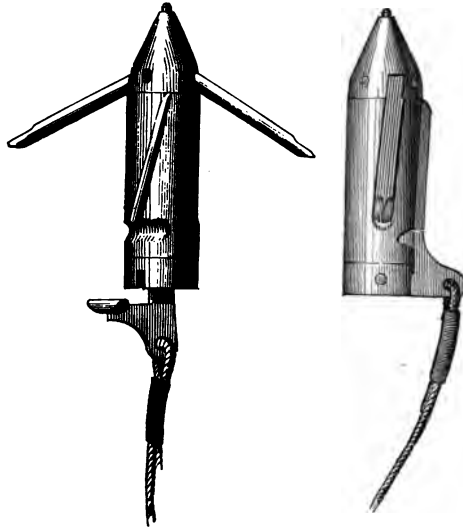
The weapons used are hand-harpoons, gun-harpoons, and spears or lances. The harpoons are made of the best Swedish iron, which is more pliable than the English, and are attached to good sound wooden handles.

Let us suppose that the look-out man, by the well-known shout of "A fall! a fall!" has given notice of the appearance of a whale; that the boats are lowered and manned, and that the chase has begun. The incidents which may be expected to take place we can judge of from the numerous records on hand, and, adapting a narrative from Captain Markham's lively pages, we shall suppose ourselves to partake in the following scenes.

A calm, lovely day, with the sunshine flooding the sparkling sea, and lighting up in glory the distant bergs and hills of ice and snow.

We pull for about six miles in the supposed direction of the fish, but discover nothing of it. Lying on our oars, we watch and listen patiently. Before long the "spouting" of a whale is seen at a distance, followed by other "spoutings;" but the air is so bright and clear that always, on our approach, the monsters catch sight of us, and down they go with a tremendous splash of their colossal tails! It is about twelve noon

before we get within reach of a fish. The harpooner springs to his feet, steadies himself, takes the line in one hand, the harpoon in the other, and sends the iron flying through the air with aim so true that it is buried deep in the creature's flesh! Now we are "fast;" and a couple



GUN-HARPOONS.

of boats coming up to our assistance, the others disperse in quest of additional victims.

Let us transfer ourselves to one of these.

Across the dark-green waters we pull away merrily, and, about two o'clock, come in sight of a noble she-whale and her "sucker," or young one. Whales, as has been already said, are capable of very strong affection, and the

mother and her cub are always found in company. With another boat following us, we hasten in swift pursuit. Soon they change their course, and it becomes evident that she is ignorantly making towards us; so that all we have to do is to rest on our oars and bide our time. In a few moments she rises close to our comrades; whose harpooner, equal to the occasion, smites her with his deadly weapon, while every voice is raised aloud in the glad shout of "A fall! a fall!" But though so easily struck, it turns out she is not to be so easily killed; and, in fact, we find her before long a most troublesome and awkward customer.

After about three-quarters of an hour's hard pulling, chasing her round and round our sister-boat, until our men are pale with fatigue and look as if they would drop at their oars, we succeed in getting up with her, and deliver another harpoon. Immediately she dashes off at a terrific rate, towing both boats fully six knots an hour, and running out the line attached to the harpoon with such frightful swiftness that the wood smokes with the friction, and we are compelled to pour water upon it to prevent it from catching fire. At one time the leviathan nearly drags us down altogether—down into the "deep, deep sea." While she has stopped to blow for a few minutes, the line, which, from the extreme friction, has actually burned a deep scar into the pulley on which it runs, has cooled, and stuck fast to the wood. Our fish takes a sudden thought into her head, and plunges straight down, like a mass of lead; the line does not give—it drags the bows of the boat under the water—the waves splash

and toss over the harpooner—and all seems lost. But what threatened our destruction really proved our safety ; for the water lubricated the line so that it yielded, and then the boat righted, though with water enough in her to reach almost to our knees. Dangerous, indeed, would have been our situation had the line held fast, and nothing could have prevented the boat from being carried down ; in which case our chance of safety was very small.

About five o'clock another boat bears down to our assistance, and before long five more harpoons are quivering in the monster's flesh. We hurl a volley of lances, and all hit their mark ; yet the creature does not die. Next we fire three rockets into the unfortunate object of our greed. But it still clings to life. What is to be done ? Our weapons are exhausted, our energies are spent. It looks as if we should lose our prize after all.

But no : the ship's crew have watched our prolonged struggle, and seeing that we are likely to incur defeat, they bear down upon us, and taking on board the lines from one of the boats, prepare to haul in the captive. Not a bit of it ! Leviathan is hooked, but not taken ; and for hours the gigantic animal tows the ship and seven boats at the rate of three miles an hour, through what seems to be a sea of blood. Gradually, however, her furious struggles slacken, and it is clear that she begins to feel the loss of blood. Slower and slower her course ; feebler and feebler her exertions ; and, as the night gathers in, she has so far reduced her speed that a boat is able to overtake her and deal a death-blow, amidst the cheers of all hands.

It is half-past eleven before we return on board the ship, after a campaign of fourteen hours; and we own to one another that, whatever the romance and excitement of whale-fishing, it is undoubtedly fatiguing.

We have been fortunate in our experiences, and have come out of the battle in complete security and crowned with honour. But such is not always the whaler's lot. The perils to which he is exposed are, in truth, of a complex character: he may be drowned in the open sea, starved on the desolate shore, or cast away on the drifting field of ice, or sunk by an iceberg! In the year 1830 twenty British whaling-ships never returned to port. Two were literally cut in twain by the ice; another had her side driven in; two were crushed perfectly *flat*, and then thrown on their broadsides; a brig was lifted bodily on to the ice, and sank immediately the "pack" gave way. In the year 1874 two fine steamers, the *Arctic* and the *Tay*, were destroyed.

The following true story will illustrate the nature of the perils the whaler is required to confront.

A whaling-ship in Davis Strait was running under reefed topsails and foresail at the rate of ten knots an hour before a violent southerly gale. The snow was coming down in heavy drifts, and it was difficult to see even a few yards in advance. The crew were busily engaged in getting the boats in-board, to save them from the tremendous white-crested waves which rolled up astern and on each side, as if they would overwhelm and engulf the daring bark that was careering wildly over their

foamy ridges. Suddenly they descried a huge mountain of ice ahead! To have come in contact with it would have been ruin to the ship and death to her gallant crew.

"Hard-a-port!" shouted the look-out in tones of agony; "hard-a-port" was instantaneously echoed all along the deck; "hard-a-port" was quickly answered by the vigilant and ready helmsman. Before the words were out of his mouth he had obeyed the command. A moment's breathless suspense for all on board; and then, amidst the piercing wail of the wind, and the creaking of the masts, and the rattling of the blocks and cordage, and the roar of the furious sea as it dashed against the crystal sides of the berg, the little ship, obedient to her helm, flew round and swept past the floating mountain. All was safe! But so narrow was the escape that her yard-arms scraped the surface of the berg as the vessel flew by.

Has the reader patience to listen to another anecdote?

A whale had been harpooned on the east side of Baffin Sea, but the line having given way, it succeeded in effecting its escape, though not without a couple of harpoons in its flesh, as memorials of the adventure it had met with. Strangely enough, the same ship fell in with the same whale, a few days later, on the *west* side of the sea. Boats were immediately despatched to capture the prize; but this was no easy achievement. One of them overtook it, and the harpooner discharged his harpoon-gun with good effect. He was in the act of following up the blow with a hand-harpoon, when the fish gave a tremendous leap, and dealt the boat a blow with its ponderous tail

which shivered it into fragments, and hurled the crew into the water.

The ill-fated harpooner was never seen again, and we may conjecture that he got entangled in the line and was dragged down. The remainder of the crew, with one exception, were picked up by the other boats; the exception being a seaman who had contrived to swim to a piece of ice, but, benumbed by the terrible cold and spent with fatigue, had failed in his efforts to raise himself upon it. Undoubtedly he would speedily have perished, had not a comrade, mistaking him for a *seal*, pointed him out to the others, who straightway rowed towards him, and discovering who he was, hastened to take him on board. Restoratives were then administered, but it was some days before he recovered. When rescued from what seemed a sure and speedy death, his clothes were frozen hard upon his body.

From what has been already said it must be evident to the reader that the whale-fishery, even when carried on with the most approved appliances, is an eminently hazardous enterprise, and one which might be supposed to be altogether beyond the powers of the native races of the far north with their rude weapons and frail canoes. In spite of sad drawbacks, however, the Aleuts in the north-west and the Eskimos in the north do not hesitate to attack, and frequently succeed in capturing, the leviathan of the deep. When the Aleut, ever alert in his tiny skiff, catches sight of a whale, he stealthily approaches it from behind, until near its head, when suddenly he drives his spear into its flanks, just beneath the front fin. This done, he makes

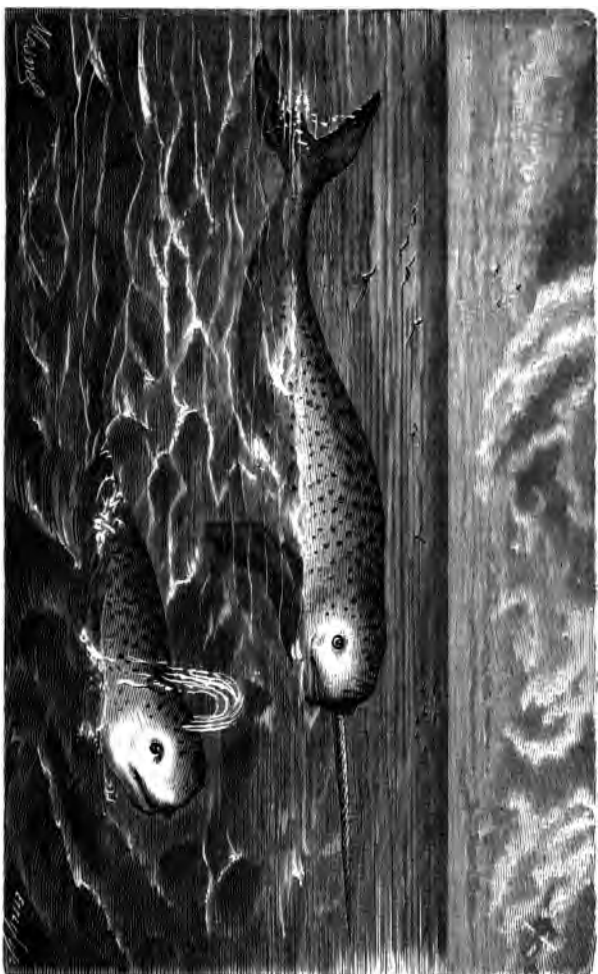
off with all speed, so as to escape the vengeance of the creature, now rendered furious with pain. Should the spear have entered the flesh, the whale is certain to die a day or two after, and its carcass will, in all probability, be cast ashore in the neighbourhood, where the hardy Aleut is waiting to claim it as his own—a claim which is made good by an examination of the spear, which always bears its owner's mark. He has not always, however, the good fortune to get out of reach of the wounded whale; and when thus caught, the Aleut, with his light craft, is hurled by a single blow of its tail high into the air. Nor is this the only misfortune that may happen to a native whaler. The creature, although killed, may be carried out to sea, and there fall a prey to sharks, whale-killers, and rapacious birds. Thus in 1831, out of one hundred and eighteen whales fatally speared near Kadjack, only forty-three were found.

The Eskimos hunt the whale in companies, and among certain tribes it is usual for the women to take part in the work. When a whale is seen, a fleet of kayacks, manned by the Eskimos, paddle up in its rear, one of which then shoots ahead of the others, until sufficiently near the creature's side for one of the men to plant a harpoon with all his force into its flesh. An inflated seal-skin with a coil of native rope is attached to the harpoon. The whale, on receiving the wound, immediately dives, to reappear, however, a few minutes after for the purpose of breathing. The floating of the seal-skin, like a buoy, on the surface is the signal for a fresh shower of spears from the boats; and the whale again dives, but now covered with bleeding

wounds. This process is repeated, time after time, as the whale reappears, until, exhausted by loss of blood, it at last falls a victim to its persecutors, who now tow their prize ashore. The successful harpooner is held in deserved reputation, and among the Eskimos at Cape Bathurst the highest honour known to them is conferred upon him; this consists in drawing a blue line across the upper part of his face, coupled with the privilege of acquiring two wives.

Before passing from the whales, the reader's attention must be directed to that most remarkable form, the so-called Sea-unicorn, or Narwhal. This animal belongs to the great family of the Dolphins, and is distinguished by the tusk which springs from its upper jaw—a long, spiral, tapering horn of ivory, frequently eight or ten feet long. There are, in fact, *two* tusks, but one remains undeveloped; and, indeed, in the female narwhal both, though imbedded in the bone, make no visible sign. Occasionally both tusks are equally developed in the male; but the rarity of this may be inferred from the fact that not more than a dozen specimens of two-horned narwhals are known to exist in European collections.

What the male narwhal does with its huge horn or tusk is not accurately determined. The most probable conjecture seems to be that it is used as a weapon of war; if so, it must be a very formidable one. It cannot be of any service in procuring food, for the narwhal lives upon the "small fry" of ocean,—on molluscs, squids, and small fish. The force of the tusk is, we may add, immense, when urged by the creature rushing at full speed through the water;



NARWHAL—MALE AND FEMALE.

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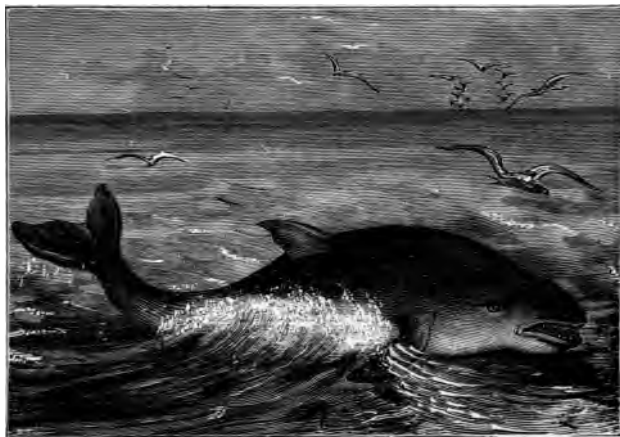
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and instances are on record of a narwhal coming in collision with a ship, and driving its weapon right through the sheathing and into the solid timber. As in a case like this the tusk always breaks off, we may suppose that the encounter proves fatal to the animal.

The narwhal is a very powerful animal, and swims with incredible speed in small herds known as "schools." Captain Scoresby tells how they were often to be seen in bands of fifteen or twenty sporting around his ship. They were extremely playful, frequently raising their horns out of the water and crossing them with each other as in fencing, at the same time emitting a peculiar sound, somewhat resembling the gurgling of water in the throat. Their curiosity—always a conspicuous feature—appeared to be greatly roused by the presence of so unusual an object as a ship in their midst, and they could be seen as they followed it in the clear, transparent water descending to the keel and playing about the rudder for a considerable time. The mouth of the narwhal is very small in proportion to the size of the creature, being scarcely large enough to admit a man's hand. Its food consists chiefly of the smaller cuttle-fishes and crustacea.

The Greenlanders give the narwhal a high place among their ocean-treasures. With its long ivory tusk they arm their spear-heads; its flesh is considered excellent eating, both fresh and cured; and its oil, though not very abundant, is of good quality.

As herrings abound in the Northern waters, so do their persevering enemies the Porpoises, which work wild havoc



PORPOISE.

among the glittering, silvery shoals. They are always found together in large herds, and in their onward course are remarkable for the regular array they preserve—following in single file, with their black and shining backs occasionally glancing above the water, and now and then indulging in nimble bounds and gambols, as if under the influence of a feeling of keen enjoyment. And there is no reason why they should be supposed incapable of pleasure. Animals have their moods, like men, and are probably as sensible, in degree, as we are of cheery external influences,—the sunlight, the fresh breeze, the breath of summer.

Porpoises vary in length from six to eight feet. Underneath the skin lies a layer of fat, about an inch in thickness, which yields a capital oil. The skin is made into leather.

In Hudson Bay—so named from its gallant but ill-fated discoverer—and in some of the channels which penetrate towards the Pole, our navigators not unfrequently fall in with the Beluga, or White Whale, which, like the narwhal and the porpoise, belongs to the Dolphin family. Its average length is eighteen to twenty feet. Its tail is thick and powerful, and acts with such strong leverage against the water that the creature, when excited or terrified, darts forward like an arrow.

The beluga is the handsomest of all the whales, being of a white colour, sometimes tinged with rose or yellow. It is also gregarious, feeding and gambolling in herds, and often to be seen following whaling-ships; now diving for their prey, and then rising to the surface with an easy roll, as if delighting to show the whole of their bodies above water. This is one of the few cetaceans that can be kept alive in captivity for any length of time, where it seems to exhibit much of the docility and intelligence of the seal. Professor Wyman, describing one which lived for two years in confinement, says that it showed during that period considerable capacity for education. "He was sufficiently well trained to allow himself to be harnessed to a car, in which he drew a young lady round the tank; he learned to recognize his keeper, would allow himself to be handled by him, and at the proper time would come and put his head out of the water to receive the harness or take food. At times he showed a playful disposition, and amused himself sometimes with splashing about in the water, and at others with tossing stones with his mouth. He often took in his mouth a sturgeon and a small shark

which were confined in the same tank, and after playing with them for a while, allowed them to go unharmed."

It visits the west coast of Greenland annually, and is highly prized by the natives,—for its oil, which they burn and drink; its flesh, which they eat; its skin, which can be converted into leather; and its sinews, which they manufacture into thread.

I come next to consider those gentle and inoffensive creatures which are supposed to have given rise to the fable of the Mermen and the Mermaids,—I mean the Seals. They have a habit of standing in the water, in much the same position that swimmers call *treading* it; and it is possible that, seen at a distance, with their breasts just above the level of the wave, they may have been mistaken for a race of ocean-women. But the resemblance would hardly be detected by any but a credulous and excited imagination. They are very fond, too, of creeping up on the ice, and lying there in the sunshine, basking in it and enjoying it with quite a human feeling of enjoyment. But they never venture far from the brink of the ice-floe, or from some hole in the ice which they have made for the purpose; and on the slightest alarm they glide into the deep waters and disappear. The Eskimo, therefore, resorts to various stratagems in order to ensnare them. He clothes himself in a seal-skin and scrambles stealthily towards them, taking advantage of every hummock and protuberance; and then, when he gets within range, bringing them down with his javelin or bow and arrow.

At other times he seeks to charm the seal by *talking*

to it. This consists in keeping up a peculiar bellowing noise—no doubt regarded as musical by the Eskimos—which engrosses the attention of the seal, and prevents it from observing that the wily hunter, as he lies on his side, is at the same time propelling himself so as gradually to lessen the distance between them. The seal is said to spend its time on the ice in alternate periods of waking and sleeping, neither of these lasting for more than two or three minutes at a time; and it is chiefly during these moments of repose that the hunter makes his stealthy approach, the seal-song being executed with special vigour during the creature's intervals of watchfulness. This plan, however, often fails, owing to the Eskimo hunter attempting to get too near his victim. The charm is then broken, and the seal, becoming suddenly alive to the danger of its position, drops into the water, not head first, as with most amphibious animals, but with its tail to the water, the point of the nose being the last to disappear.

At other times the hunters, accompanied by their dogs, no sooner set eyes on a seal than, with as great a noise as possible, they rush towards it. The creature, bewildered by the noise, loses its wits for the moment, forgetting until it is too late to pop into its hole, where it would be safe beneath the ice. This method, as might be expected, is seldom successful with old individuals, but is often so with young and inexperienced seals.

The usual method, however, employed for the capture of these creatures is that of watching for them at their air-holes in the ice. The seal cannot remain for more than fifteen minutes under the water without coming to

self. Baby-seal is the greatest delicacy of the Eskimo table, and is therefore greatly sought after. When the position of one of these subterranean retreats has been indicated by the dog, the hunter retreats some distance, and then rushing forward, leaps high into the air and comes down with all his weight on the top of the snow hut, or *igloo*, as it is called, the dome of which is thus crushed in, and soon the body of the baby seal is held aloft quivering on the Eskimo lance. Sometimes it is merely caught, and with a line attached is let into the water in order to attract the parent seal to its hole, where it inevitably falls a victim to the well-aimed harpoon. Man, however, is not the only enemy of the infant seal. Its body is greatly prized by the Polar bear and the Arctic fox, both of which are able not only to scent its whereabouts, but also to dig it out of its snow house.

The capture of a seal in winter, when food is generally scarce in these northern regions, is an event of considerable importance, and is made the occasion of a general feast. According to Captain Hall, the customary preliminary at these festivities is to consecrate the seal by sprinkling water over it. The host then proceeds to separate the blubber from the solid meat and skeleton. The body having next been opened, the blood, on which very special store is set, is scooped out; and the liver is then cut out and distributed in pieces to all the company, who eat it raw, but in combination with a small portion of delicate white blubber, which, as Hall remarks, answers the same purpose as butter with bread. The ribs are thereafter distributed and picked. At the conclusion of the feast it is customary

for the hostess to send round presents to all the households of a portion of blubber for their oil-lamps. The quantity of seal, or indeed of any kind of animal food, consumed by an Eskimo at a single meal is enormous; but such feasts are often followed by prolonged fasts, caused by the precarious nature of their food supplies. The one just described had been preceded by a long period of famishing, when day after day the hunters returned empty-handed from watching the air-holes of the seals; when neither light nor heat could be obtained for want of oil, and when Hall himself was reduced to his last ration—"a piece of black skin one and a quarter inch wide, two inches long, and three quarters of an inch thick." The life of the small community among whom he was then residing depended on the speedy arrival of a seal; and had the needful supply been delayed but a few days longer, the result would no doubt have been serious.

A somewhat similar experience befell Dr. Kane during his exploration in search of Sir John Franklin. His party had reached Cape York on their way back, almost dead with hunger and fatigue, but without food to stay the former, and unable, owing to a low fever from which they were suffering, to sleep off the latter. In this crisis of their fortunes, and when attempting to cross an open bay in boats which required constant bailing to keep them afloat, they observed, squatted on the ice, and apparently asleep, a seal, so large as to be mistaken by them at first sight for a walrus. Almost overpowered with the feeling that their lives depended on its capture, they prepared to approach it. The oars were muffled with stockings, and

Kane communicated his orders by signal, so that no noise might be made, while one of their number was stationed at the bow with a rifle in his hand. Their excitement was so intense that the oarsmen could scarcely keep stroke. The seal, by raising its head, showed that it was not asleep, and the hearts of the crew well-nigh failed them when they saw the animal move. Being now, however, within three hundred yards of it, the signal was given to fire, and just as the creature had arisen on its flippers and was about to plunge into the deep, its course was suddenly arrested by a bullet from the rifle, and its head fell helplessly on one side. Another shot would have been advisable, but the men could no longer be restrained; with a yell of delight they rushed upon the booty and bore it up to safer ice, where with their knives they fell upon it as only famishing men could.

The seal is thus an animal of great value to the Eskimo, as well as to the Arctic traveller. It provides him with food, with oil for his lamp, and clothing for his person; he covers the framework of his boat with its skin, or converts it into a summer tent; and out of its fibres he manufactures various kinds of thread.

You cannot look at a seal without seeing that it is designed to pass its life chiefly in the water: it has a long, cylindrical, fish-like body; and its limbs and feet are so modified as to resemble and answer the purpose of fins. Yet it belongs to the mammals,—is warm-blooded, breathes by means of lungs, and suckles its offspring at its breasts, or *mammæ*.

Great precautions have been adopted to fit it for an



KANE'S PARTY AND THE SEAL.



aquatic life. The body is thickly covered with a fine double fur, which prevents the intrusion of any moisture; and both this fur, and a thick layer of fat underneath the skin, help to protect it from the excessive cold of the icy regions it inhabits, as well as from the injurious action of the water.

But, as the reader knows, the seal can also live, at least for a time, upon land. It is an amphibious animal; now gambolling in the waves, now taking its rest on floe or berg. But whereas it moves in the water with the utmost ease and grace, on land it waddles or shuffles along in a very awkward manner,—though, it must be confessed, at a tolerably rapid rate. In swimming, it impels itself chiefly with its hinder feet; but in crawling ashore it employs its fore limbs, which are furnished with strong claws.

Its principal food is fish, which it catches so dexterously that tame seals have been trained to go a-fishing for their owners. It also feeds upon molluscs and various kinds of crustacea.


The seal has a very large brain, and is therefore gifted with more than ordinary intelligence. The eyes are large, full, and bright, with a quick and pleasing expression. The nostrils are formed in such a manner that they can be completely closed while the animal lurks beneath the surface, and opened immediately on its rising to breathe the outer air. A wonderfully ingenious modification of the structure of the ears is also adapted to prevent the entrance of water. The whisker hairs are long and thick; and as they are connected with large nerves, it is probable

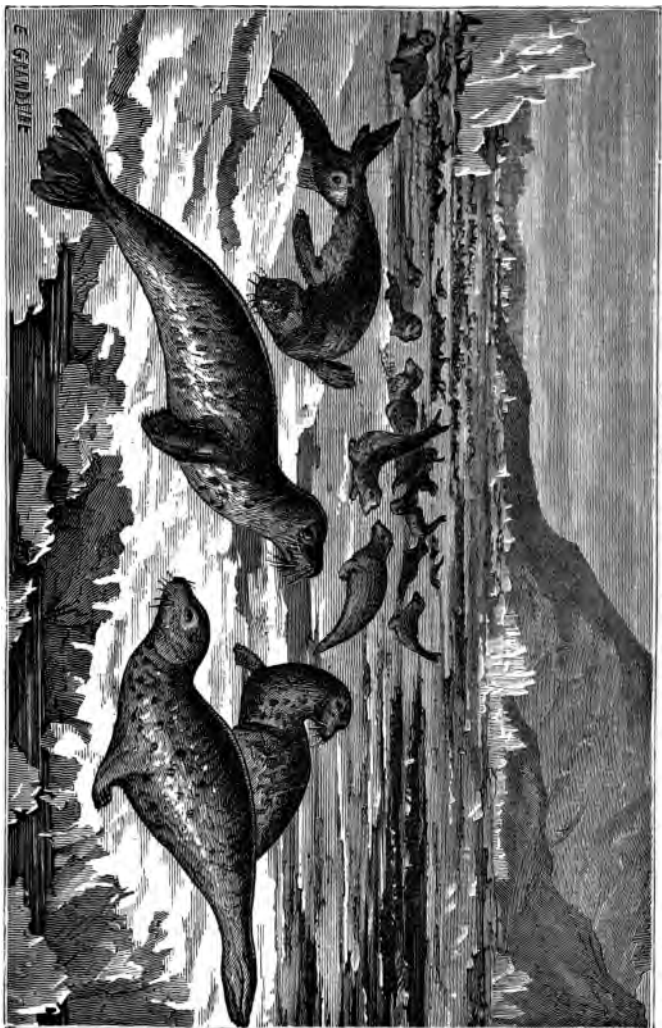
that, like the antennæ of insects, they assist in the capture of prey. For seizing and retaining the prey, the animal's molar teeth are covered with long, sharp points of various sizes ; while the canine teeth are long, sharp, and powerful. Altogether, the organization of the seal is an interesting subject for study and reflection ; illustrating, as it does, in every detail, the prevision and beneficence of an All-wise Creator.

Seals are very fond of music, and are often seen with their heads raised out of the water listening to the songs of the sailors. The church of Hoy, in Orkney, is situated near a small sandy bay much frequented by seals, and here, according to Low, when the bell rang for divine service, all those creatures within hearing swam directly for the shore, and kept looking about them as if surprised, rather than frightened, and in this manner continued to wonder so long as the bell rang. Sir Walter Scott makes allusion to their fondness for music when he tells how,—

“ Rude Heiskar's seals through surges dark
Will long pursue the minstrel's bark.”

The love of the female for her young is very strong, and she often faces death rather than abandon her offspring. When conscious of approaching danger, she has been known to seize her cub with her flippers and carry it into the water. The male seals, on the other hand, are said to be fond of worrying the young, taking them in their teeth and shaking them as a terrier would a rat. The seal is very tenacious of life, and after being skinned—an operation which is performed with great speed by those accustomed to the work—they have been known to strike out






SEALS ON THE ICE-PACK.

in the water. It is usual, however, for the sailors compassionately to end their miseries by piercing the heart of their victims.

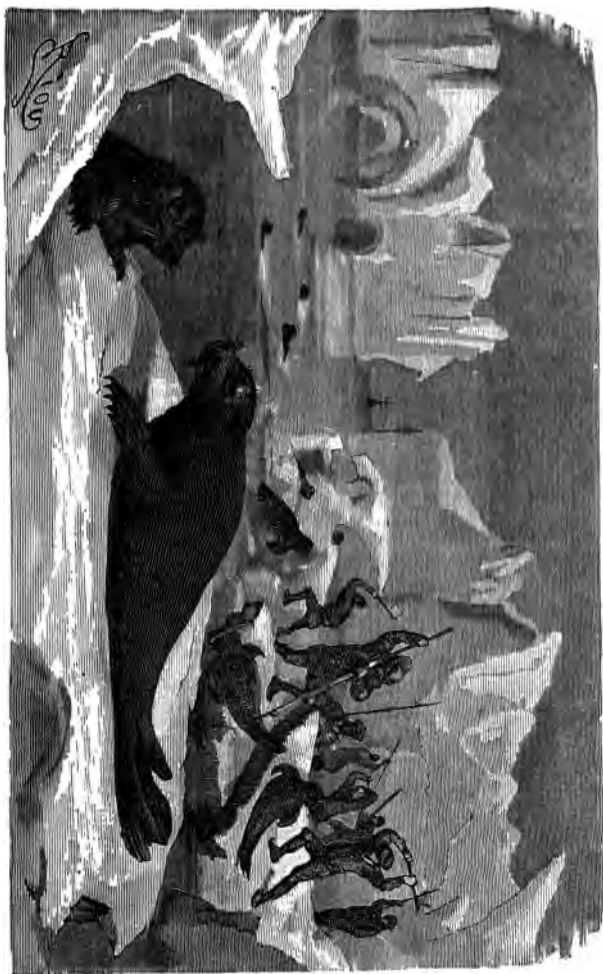
The seal is the object of an extensive fishery on account of its valuable fur and oil, and hundreds of ships proceed in search of it along the coast of Labrador, off the shores of Newfoundland, or into the bays and channels and seas of the Arctic Regions.

The British sealing-fleet, which hails principally from Dundee and Peterhead, collects annually at Lerwick, the chief town of the Shetland Islands, where the ships obtain their full complement of seamen, and from which, early in March, they sail northward to the neighbourhood of Jan Meyen, a volcanic island 8000 feet high. Here they usually reach the pack—that is, ice broken up into pieces of every size, and closely packed together. Towards this the old seals migrate from the far north during the breeding season, and on it the young seals are born. It is the object of the fleet to find out the part of the pack which has been selected for this purpose, and accordingly the ships sail along its edge, occasionally penetrating it for a little distance, until at length they meet with the objects of their search, which they usually do before the end of March. To reach the seals on the pack the ships are forced, under steam and canvas, through the almost impenetrable ice, the crew assisting to make a passage by means of ice-saws, and occasionally by blasting with powder. On reaching the sealing-ground, the men scatter themselves over the ice, armed with rifles, harpoons, and a great variety of other weapons; and taking up their station

close to a number of young seals, they lie in wait for the arrival of the parent animals, who are never long absent at this season. These are harpooned one after the other as they arrive, while the motherless cubs are left in most cases to die of starvation. This work of destruction goes on for several days, until the old seals are either killed or have been frightened away. Such of the young as have not been deprived of their mothers grow very rapidly, being able when a month old to take care of themselves; while shortly after, they are big enough and fat enough to be worth the attention of the sealers, who in April begin the destruction of the half-grown seals. Neither rifle nor harpoon is required for this slaughter of the innocents, a blow on the head with a club or even with the foot being sufficient to stun them. Sometimes as many as three thousand of these are slaughtered in one day by the crew of a single ship, which will return home at the close of the season with a cargo of twenty-three thousand of them, yielding two hundred and thirty tons of oil; while it is calculated that over two hundred thousand are thus annually slaughtered by the fleet which starts from Lerwick. It need not be matter for surprise that these creatures are not now found so abundantly on the pack ice as formerly. According to the statement of one of the sealing-captains, "a pack of seals fifteen or twenty years ago would have extended as far as could be seen in every direction from the mast-head with the aid of a good telescope, lying as close as a flock of sheep, the reflection darkening the sky above them. A ship falling amongst them had no difficulty in at once filling its hold. Now,



A SEAL-HUNT.



—


however, the packs rarely exceed a twentieth of the above size."

After the young seals take to the water, they soon disperse, and the sealing-ships then proceed to put their house in order: the blubber is separated from the skins, the former being placed in tanks in the ship's hold, and the latter salted. If there be still room for more cargo, the ships proceed northward in search of the old seals, which now lie basking in the full enjoyment of the summer sun. They are, however, exceedingly wary, and their capture requires considerable skill. Having approached within seventy yards of a group without disturbing them, the hunter fires his rifle, and so long as he succeeds in shooting them through the head, so as to kill them instantly, the others will not take alarm; but should one be merely wounded so as to be able to run off, it gives the signal to the others, who immediately seek safety in the water.

There are various species of seals; some of which are peculiar to the Southern Ocean.

The Crested Seal is so called in allusion to a singular cartilaginous crest, about six inches high, apparently intended for the support of the hood or cowl that covers the head of the male. The said hood or cowl is covered with short hair; and as it can be inflated or contracted at its owner's pleasure, the effect is very curious.

The crested seal is more courageous than most of its family, and when it turns at bay becomes a formidable assailant. Its crest serves to deaden the force of any blow levelled at its head; and rushing at its adversary, it



freely uses its sharp strong teeth and equally strong sharp claws, inflicting dangerous wounds. The males seem animated with a peculiarly pugnacious spirit; and when two or more have fixed their affections on the same female, they engage in the most passionate combats.

The fur of this animal is valued as an article of com-



CRESTED SEAL.

merce; but to the Greenlander every part of it is useful, and by the Greenlander every part of it is prized. The fur supplies him with a costume which can resist the rigour even of that terrible Arctic climate; with the skin he covers the tiny kayacks, or canoes, that dance like egg-shells on the crest of the foaming billows; the teeth

provide him with heads for his spears; the stomach he converts into buoys which indicate the position of his fishing-apparatus; the bones can be utilized instead of timber in the construction of his hut; the flesh is his principal sustenance during the long and dreary winter.

When in pursuit of this valued and valuable prey, the Greenlander resorts to the stealthiest manœuvres.

He leaves his sledge and dogs at a distance, as soon as he sights a possible victim, and silently and slowly makes his way towards its resting-place, hiding himself, whenever the animal looks up, behind a bank of snow or ridge of ice, or, if none such be near, throwing himself prostrate on the ground. In a short time the seal recovers its composure, and again lies down to rest. Up springs the hunter, and advances with even more caution than before. On arriving near the animal, he again prostrates himself, and draws his fur hood over his head, so as to assume something of the appearance of a seal, whose movements and gestures he closely imitates. In this way he generally contrives to interpose between his prey and the ice-hole, and in that case the seal's death is certain; or he crawls close up to the slumbering seal and despatches it at a single blow. In the latter case, however, the seal sometimes wakes, and escapes into the ice-hole before its pursuer can deliver his weapon.

The Common Seal is widely distributed over the globe, and in search of fish, which it destroys in great numbers, frequently visits our own shores. It is clothed in a grayish-yellow fur, besprinkled with spots of brownish-black or brown. Its eyes are large, lustrous, and even tender.

The feet are short, and the claws of the hind feet much larger than those of the fore limbs. The total length of the animal seldom exceeds five feet, that of the head being about eight or nine inches.

Its activity, both by sea and land, is something wonderful, and in its pursuit of fish it displays an admirable amount of ingenuity. It will frequent the fishing-grounds for the whole season, familiarizing itself with the windings and angles of the fishermen's nets, and taking advantage of these to secure a considerable share of the booty.

The common seal is more easily tamed than any other species, and often figures in the popular exhibitions of our great cities,—being taught to bark at the word of command, and to go through various ingenious little performances which illustrate both its physical activity and its advanced intelligence.

"When a boy," says a writer, "I was presented by some fishermen with a seal apparently not more than a fortnight old, which in a few weeks became perfectly tame and domesticated, would follow me about and eat from my hand, and showed unmistakable signs of recognition and attachment whenever I approached. It was fond of heat, and would lie for hours at the kitchen fire, raising its head to look at every new-comer, but never attempting to bite; and would nestle close to the dogs, who soon became quite reconciled to their new friend.

"Unfortunately, the winter after I obtained it was unusually rough and stormy. Upon the wild western coast the fishing-boats could seldom put to sea, and the supply of fish became scanty and precarious. We were

obliged to substitute milk in its place, of which the seal consumed large quantities; and as the scarcity of other food still continued, it was determined, in a family council, that it should be consigned to its own element, to shift for itself.

"Accompanied by a clergyman, who took a great interest in my pet, I rowed out for a couple of miles to sea, and dropped it quietly overboard. Very much to our astonishment, however, we found that it was not so easy to shake it off. Fast as we pulled away, it swam still faster after the boat; crying all the time so loudly that it might easily have been heard a mile away, and so pitifully that we were obliged to take it in again and bring it home, where, after this new proof of attachment, it lived in clover for several months; and, I believe, might still have been in existence but for the untimely fate which most pets are doomed sooner or later to experience, and to which this one was no exception."

The Rough or Hispid Seal is found in the far Polar wastes. It is the *Netsik* of the Eskimos, of whom, as well as of the Danes of Greenland, its flesh forms the principal food. I do not think that to such meat the delicate appetites of my readers would soon grow accustomed. It is not inviting in appearance; for when raw it has a flabby look, like "coagulated blood;" when cooked, it is of a sooty colour! As for taste, the flesh is described as close-grained, but soft and tender, with a *flavour of lamp-oil*.

The large Bearded Seal is the *Usuk* of the Eskimos. It is an unwieldy, bulky, shapeless animal, about ten feet in length and eight feet in girth. It makes no breathing-holes, like the other seals, but depends for purposes of

respiration on accidental chasms in the ice; and is found wherever the bergs or floes have been in motion. Hence it is wider in its range than its sun-basking little brethren, who assemble together in herds, and in some places absolutely throng the level ice.

The Eskimos set a high value upon the *usuk*. The lines made from its skin are the lightest, the strongest, and the most durable of any in use. The hunters employ them by preference for harpoon-lines when hunting the walrus.

To obtain them in full perfection, says Dr. Kane, the animal is skinned in a spiral, so as to furnish an unbroken coil from head to tail. This is carefully chewed by the teeth of the Eskimo matrons, and after being well greased with the burned oil of their lamps, is hung up for a while to season.

We might speak of several other species of seal, but as they resemble one another in habits and organization, the advantage to the reader would be inconsiderable. We shall conclude our brief sketch, therefore, with an amusing anecdote of the way in which an Arctic explorer hunted a large *usuk*, and—did not catch it.

He saw the creature basking asleep on the sunlit ice. Without more ado, he slipped off his shoes, and commenced a somewhat chilly and disagreeable process of stalking; lying upon his belly, and crawling along, in the manner we have already indicated, behind the little knolls of ice. Just as he had arrived within long rifle-shot, the animal gave a sluggish roll on one side, and suddenly lifted its head; but the movement evidently had nothing

to do with its human enemy, for it strained its neck in nearly the opposite direction. Then our explorer for the first time found that he had a rival hunter in a large bear, who was prone on his belly like himself, waiting with wonderful patience and cold feet for a chance of nearer approach.

What was to be done? To the hunter a bear was a much better prize than a seal; but the latter was within shot, while the former was "a bird in the bush." Besides, his bullet being expended on the seal, the hunter would be defenceless. He might supply the bear with a dinner on the seal, and with himself for the dessert! His meditations, however, were soon brought to a close; for a second movement of the seal so quickened the hunter's predatory instincts that he pulled the trigger. His gun, however, missed fire, and only the cap exploded. Instantly, with a tremendous splash, the seal plunged into the deep; and the bear, in three or four rapid bounds, stood disconsolate by the place of its disappearance. For a single moment the two hunters, the human and the ursine, stared each other in the face, and then, with that discretion which is the better part of valour, the bear hurried away in one direction, and the man followed his example in the other.

The Otarias, or seals furnished with external ears, are found chiefly on the western side of the American continent, from Behring Strait to the Antarctic Islands; and it is to one of these, the Sea-Bear, or Northern Fur-Seal, that we owe the valuable fur of commerce. It occurs in greatest abundance on the shores of St. Paul and one or

two neighbouring islands, where it is hunted by the Russian Fur Company, who employ for this purpose the hardy Aleuts. Between 1786 and 1833 more than three million fur-seals were killed on those islands; and, lest the price of furs might decline in presence of such enormous supplies, the company of traders already referred to destroyed in the year 1803 no fewer than 700,000 skins. The usual decrease in the number of fur-seals followed this wholesale slaughter; and this led to the adoption of certain rules for the regulation of the fishery, which has resulted in a great increase of the number of seals, without seriously interfering with the quantity of skins available for the market, which now reaches an annual average of over 100,000. A calculation was recently made of the number of seals on the island of St. Paul, and it was estimated that there were no less than 1,100,000 breeding males and females.

The male seals arrive on the shores of those islands about the middle of April, and take up their position on certain low rocks which lie just above high-water mark. As soon as these arrive the islanders put out all their fires, and no one is allowed to approach the "rookeries," as the breeding-places of the seals are called. By the middle of June all the males have arrived; and shortly after, they are joined by the much more numerous females, there being from ten to fifteen of the latter to one of the former. The males fight terribly among themselves for the possession of the females, and make a noise in these encounters which has been compared to that of a railway train in motion. The young are as frolicsome as kittens,

and are constantly engaging in mimic fights among themselves. They are taught to swim by the old males.

By the end of September the killing-time has arrived, when the hunters, creeping stealthily along, get unperceived between the seals and the shore. They then suddenly rush forward with great shouting and noise, and drive inland all the seals that happen to be within the line thus formed. The animals thus cut off from the shore are next carefully examined, when all those that are too old are allowed to make their way back to the sea. The rest are driven inland, often for several miles, for the double purpose of not scaring away the remaining seals by the smell of dead carcasses in the neighbourhood of the rookeries, and of carrying their own skins to the salting-house. Should the seal be overheated on the journey, the fur of its skin is apt to get loosened and to fall off; consequently great care is necessary both in selecting a cool day, and also in the rate of speed at which they are driven, which it appears should not exceed one and a half mile an hour. They move along by raising themselves from the ground on their fore legs—which are much better developed, and have much more foot-like terminations, than the earless seals of Europe—and spurting themselves forward with what Frank Buckland calls a “kind of sideways loppeting gallop.” It is only the males, and of these only such as are two or three years old, that are taken for their skins, the females and all males with imperfect skins being allowed to return to their native waters.

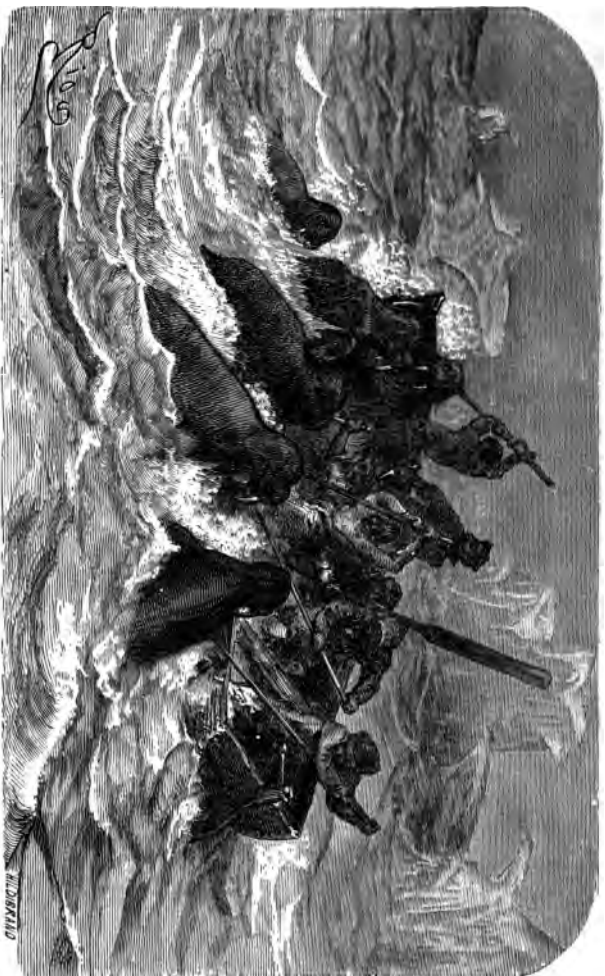
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to fight, conduct themselves with wonderful coolness and courage—dash in serried array against the boats, and with their massive tusks endeavour to capsize them.

Captain Beechey, in his narrative of the voyage of H.M. ships *Dorothea* and *Trent*, gives a lively picture of an adventure of this kind. One evening, while his ship was anchored in a bay on the coast of Spitzbergen, several herds of walrus were seen disporting themselves on the neighbouring ice. Ever eager for adventure, several boats were manned and equipped for a hunt; and so intent were the amphibious creatures on their pastime, that the sailors effected a landing on the ice without disturbing them. No sooner, however, had the first shot been fired than, struck with sudden panic, the unwieldy creatures rushed towards the edge of the ice, nearly upsetting the guard placed there to intercept them. The latter, taken by surprise at the suddenness and impetuosity of the stampede, had enough to do to get out of the way without attempting to make use of their weapons. The herd thus got into the water almost unmolested. The mate of the brig, however, seeing one which had been desperately wounded on the head, and thinking in this case to secure an easy victory, boldly struck his tomahawk into the creature's skull. With a toss of its head the furious walrus sent the weapon flying into the air, and followed its companions into the water. Taking to their boats, the seamen pursued the walrus, who, feeling more at home in the water, now turned upon their assailants; snorting with rage, and raising themselves up in the water, the creatures rushed at the boats, threatening every moment, by placing their tusks on the

sides, to capsize or stave them in. The tomahawks and spears of the seamen were plied with the utmost vigour on the walrus' hides; but these were too tough to be affected by them, the whale spears being bent double in the attempt. There was no time to load a gun, which would have been the only effectual weapon in dealing with such tough-skinned animals. The herd was observed to be under the leadership of a furious old walrus, who made himself conspicuous by his endeavours to destroy the boats; fortunately the purser had his gun loaded, and, pushing the muzzle down its throat, he lodged the contents of the barrel in the creature's stomach. The poor animal fell back among its fellows, who, desisting instantly from the attack, bore their leader off, supporting him with their tusks, and thus preventing him from sinking and consequent suffocation. Of all the herd, only a young one, not yet in possession of tusks, remained. Although thus lacking the chief means of offence, it by no means lacked the will or the courage to avenge its fallen leader. It swam violently against one of the boats, using its head as a ram, and would in all probability have crushed it in, had it not been kept at bay by the lances of the crew. Although the sailors, from admiration of its pluck, would willingly have let it go, so determined was the infant walrus on revenge or death, that when they again landed on the ice the wounded creature crawled after them until a rifle-shot put an end to its sufferings.

It is commonly said that the bear frequently attacks the walrus, and often gets worsted in the struggle; but Dr. Kane doubts the accuracy of the statement. The walrus,



BOAT ATTACKED BY WALRUS.

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he remarks, is never found far from the water; and it is, moreover, so strong and resolute that the boldest bear would shrink from engaging it in battle.

The same traveller thinks that the resemblance of its face to the human countenance has been greatly exaggerated. The suggestion is sometimes advanced, as in connection with the seal, that this animal was the original of the old fables of mermen and mermaids; but its square-cut head effectually destroys all likeness to humanity at a distance, and its colossal size has the same effect near at hand.

The walrus is partial, like some higher animals, to the sound of its own voice, and will recline on the ice for hours listening to its continuous bellow. Of the melodiousness of this bellow we cannot speak favourably. Critical ears will hardly appreciate a succession of sounds which are something between the mooing of a cow and the deepest baying of a mastiff, even though they are, as described, "very round and full," with detached notes repeated rather quickly seven to nine times in succession.

The Eskimos pursue the walrus with singular ardour, and, it must be added, with great success, though their weapons are of the simplest sort. The lance used is a wooden shaft, with an iron spike bound firmly to one end of it, and a piece of walrus-tusk, shod with sharp iron, at the other. They carry also a harpoon staff, consisting of a narwhal tooth or horn, about six feet long—a very solid, hard, and straight piece of ivory. The head is a piece of walrus-tusk, three inches long, with a hole through the centre for the line, and a hole at one end for the sharpened point of the staff; at the other end it is tipped, like the

lance-head, with iron. The line is a strip of seal-skin about fifty feet in length, prepared by a process we have already described.

Let us now accompany the Eskimos on a walrus-hunt. The hunters follow one another in single file, cautiously taking their way behind hummocks and ridges in a kind of serpentine approach towards a "walrus-ground,"—which is always an area of loose thin ice, close to the brink of the sea, and bordering on the older and firmer ice.

After a patient and stealthy progress, we come in sight of a herd of five walrus, rising at intervals through the ice-crust in a body, and breaking it up with a crash and clang audible for miles. Two large grim-looking males, or "bulls," are evidently the leaders of the little company.

Now comes the marvel of the hunter's craft. While the walrus remains above water, the hunter is flat and motionless; as it begins to sink, he keeps himself alert and ready for a spring, so that scarcely is its head below the water-line before every man is rapidly gliding forward; and again, as if by instinct, before the beast reappears, all lie like recumbent statues behind projecting knolls of ice. The hunter seems to know beforehand, by a species of intuition, not only how long it will be absent, but the exact place where it will reappear. In this way, by feints, and dodges, and spurts, the Eskimos reach a plate of thin ice, scarcely strong enough to bear them, at the very edge of the water-pool in which the walrus is disporting its unwieldy bulk.

Myouk—for such is the name of the foremost—now wakens into keen enjoyment. His well-trimmed line is

lying at his side. One end of it he deftly fixes in an iron barb, which he fastens loosely by a socket upon a shaft of narwhal-horn ; the other end is already looped, or, to use a sailor's phrase, "doubled in a bight." All this is but a moment's work. He grasps the harpoon, and, as the walrus rises, puffing and snorting, raises his left arm. The animal, lifting itself breast-high, gives one look at the strange apparition before it dives again. Fatal curiosity ! That one look has been the enemy's opportunity, and the iron is buried deep under the left fin.

Down plunges the stricken *awuk*, and as swift as thought Myouk speeds from the scene of battle, allowing his line to run out freely, but firmly clinging to the loop. As he runs he grasps a small piece of bone, shod with iron, and by a sudden movement drives it into the ice. To this he secures his line, keeping it close down on the surface of the ice with his feet.

A sharp struggle ensues. The water-pool assumes the aspect of a small Maelström with the frenzied plunges of the wounded beast ; at one moment the line is tightened, at another loosened ; but the hunter keeps his station. But what is this ? The ice cracks and crashes, and within a few yards of him rise a couple of walrus : a male, apparently terrified, and certainly excited ; and a female, vengeful but collected. Down they go again ; and Myouk, snatching up his coil and handfast, swiftly changes his position.

Swiftly, yet not a moment too soon. The pair again rise, shivering and splintering the ice all about the very spot he has just left. As they sink, Myouk again changes

his place ; and in this way the contest is continued between brute force and human intelligence, until the victim receives a second wound, and is finally hauled upon the ice.

When the walrus is wounded, says Dr. Kane, he invariably rises high out of the water, plunges heavily against the ice, strives desperately to raise himself upon it ; and as it breaks beneath his weight, grows more and more excited, his bark changing to a roar, and the foam pouring from his jaws till it whitens his beard.

His tusks are very strong and massive, and he uses them, in climbing the steep banks of rock and ice, with so much address, that he may be found basking in the sunshine, with his young gathered round him, on the summit of rocky islands sixty and one hundred feet above the sea-level.

That he is a formidable assailant may be conjectured from the following anecdote :—A young and courageous but imprudent Eskimo plunged his *nalegit* into a brown walrus ; the beast's savage aspect alarmed him when too late, and before using his lance he called for help. Vainly the older men advised him to retreat. "It is a brown walrus !" they exclaimed. "*Aúrok-kaiok!* Hold back !" When it was seen that the young man either would not or could not follow their advice, his only brother sprang forward, and hurled the second harpoon. Almost immediately the furious creature turned upon him and ripped him up, just as a wild boar might have done.

The walrus is hunted chiefly for its tusks, the ivory of which is finer-grained and whiter than that of the elephant ; also for its hide, and among the Eskimos for its flesh.

The Russian Fur Company employ great numbers of Aleuts in walrus-hunting on the north coast of Alaska. These animals congregate in hundreds along the shore, and their assailants attacking them from the sea, seek to drive them inland. Having succeeded in this, they fall upon them with their sharp lances, striking where the hide is thinnest, and leaning upon the weapon so as to make the wound fatal. They then cleave the jaws asunder, and extract the tusks, for the sake of which alone thousands of walrus are thus annually slaughtered, their dead bodies, with all the marks of the dreadful carnage, being swept away by the succeeding spring-tides. The larger tusks measure about two feet in length, and weigh four pounds. Notwithstanding such wholesale slaughter, they are still found in large herds throughout the Polar seas. Mr. Lamont, in his recent work on "Yachting in the Arctic Seas," makes mention of seeing four flat-topped icebergs, which were so closely packed with these amphibious creatures as to be almost level with the water, and which, he says, resembled "solid islands of walrus." The hide is of considerable value, being used principally for harness and sole leather; it is also used by the Russians for wrapping round bales of furs and chests of tea in their transit across Siberia. The blubber is also taken for the oil it contains, but this is neither so plentiful nor so good as that got from the blubber of the seal.

The walrus is believed to equal if not to excel the seal in intelligence; all attempts, however, which have yet been made to keep it alive in this country, or indeed anywhere in captivity, have failed. A living example was

safely deposited in the Zoological Gardens of London in the summer of 1855; but it died a few days after, owing, it was supposed, to its somewhat unnatural diet of oatmeal-cake. Strange to say, the experiment was more nearly successful three hundred years ago, when the captain of the ship *God-speed* brought two young walrus—male and female—from the neighbourhood of Spitzbergen to London, the journey having occupied forty days, during which the female died. The other was landed alive, and exhibited at the court of King James I., where it was greatly admired, as the first that had ever been seen. It only lived a few days.

The causes which led to the total extinction of so huge an animal as the mammoth can only be matter for conjecture; a great flood may have swept them off, or they may have been hunted down by the Nimrods of the stone and bronze periods. There is no doubt, however, as to the cause of the disappearance from the same northern regions of another huge creature, known as Steller's Rhytina. This animal resembled in appearance, as well as in mode of life, the dugong and the manatee or sea-cow; but was much larger than either, measuring about twenty-four feet in length and nineteen feet in circumference. The skin was fully an inch in thickness, resembling the bark of a tree, and scarcely to be penetrated by the blows of an axe. It had no teeth, but was provided with great furrowed plates on the roof of its mouth, which seem to have been flexible and elastic, and thus admirably suited for browsing upon *the seaweeds* that formed its food. This unwieldy sea-

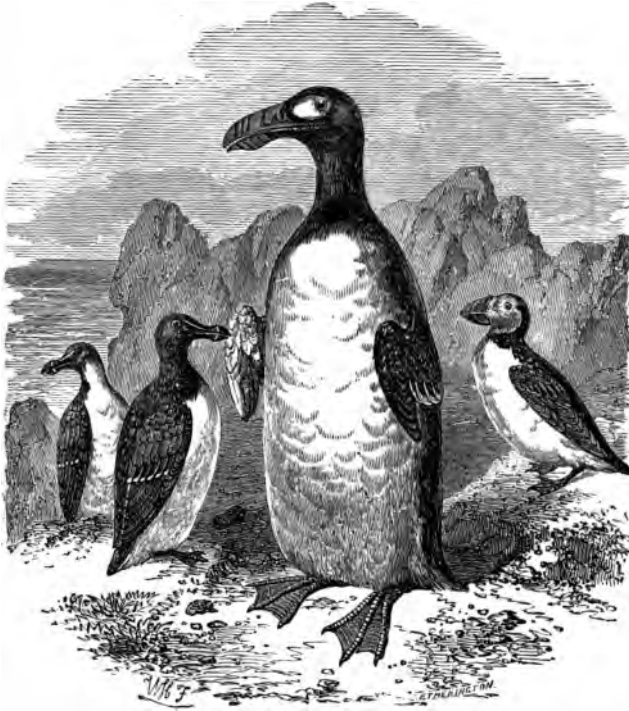
monster was first discovered in 1741, on the shores of Behring Island in Behring Strait, by a party of shipwrecked mariners, who, during their enforced stay of ten months on the island, lived almost entirely upon the juicy flesh of the rhytina. At that time they seem to have been very numerous, and when the sailors were rescued from the island, they spread the news of the existence on its shores of an almost inexhaustible supply of the most delicious animal food. This soon led to Behring Island becoming a favourite winter-station for whalers and sea-otter hunters; and so well did they relish the flesh of the newly-discovered mammal that in 1768—not thirty years after it had been first seen—the last of the race was killed; at least none have since been observed, and very few even of its bones are now to be found. Steller, after whom it was named, was shipwrecked on Behring Island, and during his stay, which lasted for a considerable time, he had ample opportunity for studying the creature, both living and dead, and it is to the admirable account which he afterwards wrote that we owe almost all that is known regarding this now extinct animal.

The air in the dreary Polar World is more thickly peopled than the earth; but the species which stir it with their restless wings are nearly all different from those that haunt the leafy woods and sunny plains of the south. The bright hues of the humming-bird are never seen; the rich music of the thrush or the keen melody of the lark is never heard. The plumage of the Arctic birds harmonizes with the character of the scenery; their harsh, clanging voices

flocks of eider-ducks sweep over the lakes and streams in search of a resting-place ; the graceful terns describe their mazy evolutions on the glassy sea ; the burgomaster-gulls and the gyrfalcons beat their powerful pinions against the wind ; the snipe hover above the fresh-water pools ; in valley and on rock the sparrows raise their familiar chirp ; the cackling geese sail onward in long array to the remotest capes and channels of the lonely North.

The Great Auk is, or rather was, an inhabitant of the Arctic Regions ; for no specimen of it having been seen alive for about half a century, there is reason to fear that it now no longer exists as a living species. It was one of the largest of Northern birds, measuring three feet in height, with imperfectly developed wings, suited for swimming rather than flying, and with its legs placed at the hinder extremity of the body, so as to give it an erect appearance when standing. It occasionally visited the shores of temperate regions, and most of the specimens of it now found in museums are such as have thus strayed out of their proper latitude. It has been seen, within the memory of people still living, among the Orkney and Shetland Islands, and in the neighbourhood of St. Kilda. A pair were noticed in the year 1813 off Papa-Westray, and the male bird, called by the natives "the king of the auks," was pursued by Mr. Bullock, an English visitor, and an ardent collector, unremittingly for several hours in a six-oared boat, but the rapidity of its movements was such as completely to foil his efforts. The bird, however, was caught some time after, and it now forms a prominent feature in the valuable collection of our native birds in the

British Museum. In 1821, Dr. Fleming had the rare good fortune, while on a cruise among the Hebrides, to obtain a live specimen of the great auk, that had been caught off the coast of St. Kilda. It was sickly and emaciated for



THE GREAT AUK.

want of food, but after being supplied for a few days with plenty of fish its condition greatly improved. Sea-bathing being essential to the well-being of these birds, the auk

was occasionally indulged with a swim in the water, the precaution being taken of securing it to the yacht by a cord attached to its leg; and even thus trammelled it astonished all who saw it by the strength and rapidity of its motions. "As it was," says a recent narrator of the story, "its love of liberty eventually proved stronger than the cord by which that liberty was restrained; for during a subsequent washing, with which it was considerably favoured, off the island of Pladda, to the south of Arran, it burst its bonds and was seen no more." It is probable that these birds owe their extinction to their inability to fly, together with their great size, which rendered them conspicuous objects to the inhabitants of the shores they frequented, and from which they seem never to have gone very far.

Not unlike the great auk in form, and resembling it more closely still in habits, is the Northern Diver, which surpasses all the feathered race in its aquatic feats. It has justly been described as a "glorious sight" to see these black-and-white-barred birds swimming upon the waves in the full consciousness of security, and driving before them myriads of silvery herrings. They dash along the surface; they dart under it; again they rise on the crest of the billow; they cleave the advancing waves like a strong swimmer; and when these break in foam and thunder over them, and the spectator fancies they are buried for ever in the deep, up they spring to the level of the unbroken water further from the land, as though exulting in the roar of the elements.

It is said that a diver will frequently make its way under water for a hundred, or even a hundred and fifty

yards, before it rises to breathe ; then, a moment, and it is down again ! But if so nimble in the water, it is

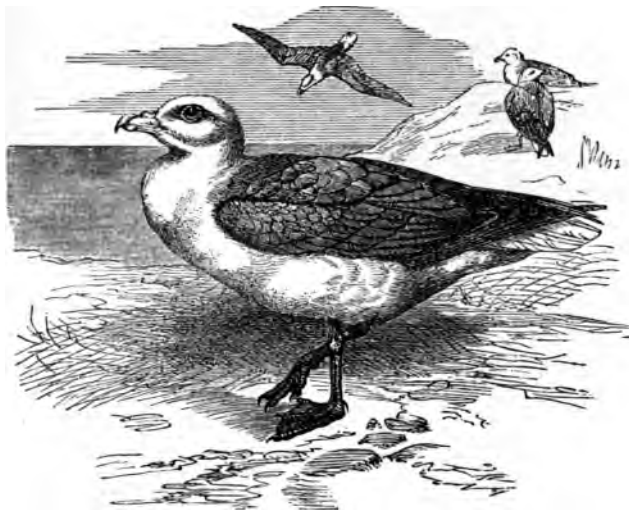


NORTHERN DIVERS.

awkward enough on land. Its legs are placed so far back that it cannot walk, and therefore it has to shove itself forward by lying on its breast and striking the ground

with its feet. It rarely flies, for it cannot rise from the surface of the water without much difficulty ; but when once on the wing, its flight is swift, though heavy. Its cry is like a human shriek or wail, varied occasionally by a low hoarse croak. Its plumage is close and its skin tough ; its flesh hard, rank, and with “a very ancient and fish-like smell.”

The whaler, as it navigates the Arctic Ocean, is generally



THE FULMAR.

attended by the Fulmar, so well known to sailors as the “bird of storm.” In truth, it seems to enjoy the fury of the tempest ; and when the gale is streaming onward with a violence that bends the strongest mast, and tosses to and fro like a straw the stoutest bark, it rides on the moun-

tain-billow as calmly as a swan on the surface of a woodland pool. It follows the whaling-ships for the purpose of snatching and feasting on portions of the blubber. As soon as a whale has been brought alongside, and the seamen begin to cut it up, hundreds of fulmars suddenly make their appearance, and taking up their stations in the rear, watch eagerly for the fragments which are wafted to leeward. There is something grotesque and amusing in the curious chuckling noise by which they intimate the keenness of their appetite, in their monstrous voracity, in the gusto with which they swallow huge morsels of fat, and in the jealous competition among them for the daintier portions. The surface of the sea at times is so completely covered with them that a stone cannot be thrown without one being struck. And if they are suddenly alarmed, the whirl of moving wings is like the sound of a hundred windmills, while the beat of their feet against the waters reminds the listener of the splash of vigorous oars.

In exploring the seas of the Polar World, the adventurer is sometimes assisted by watching the flight of the Brent Goose. This migratory bird is never found inland, and its presence is an indication, therefore, of the existence of open water. Like others of the Goose family, it feeds upon vegetable matter, generally on marine plants, as well as on the tiny molluscs that adhere to them. It is a gregarious bird, and flies in immense flocks, which assume a wedge-shaped array, and proceed steadily onward, in spite of opposing winds.

Their flights must not be confused with those of the Swans, though the latter also adopt the form of a wedge.

The swans quit the Polar seas about the first of September, and make their way to the lakes and rivers in the latitude of Hudson Bay. Here they remain until October, when they depart to warmer climes for the winter ; collecting in flocks of from twenty to thirty, and at a favourable opportunity, when the wind blows fair, mounting aloft in an orderly phalanx, and with loud screams setting forth on their annual migration. They are invariably in charge of a leader, whose occasional shrill cry, responded to by some bird in the rear, seems intended to keep them in due order. When the leader wearies of his charge, or of the labour of cleaving the air, he falls behind, and his neighbour takes his place.

Mr. Lloyd tells us that these birds, in flying, make a strange appearance. Their long necks protrude, and resemble at a distance long lines with black points, their heavy bodies and triangular wings seeming mere appendages to the prolonged neck. When thus in motion, their wings move so easily as to appear almost at rest. When sailing onward with a moderate breeze in their favour, their rate of flight may be estimated at a hundred miles an hour.

Another migratory bird, which in its southward expeditions visits France, Holland, and Germany, is the Goosander. During the summer it retires for breeding purposes to the solitudes of Greenland and Iceland, Siberia and Kamtchatka. They build their nest, in a very rude and even slovenly manner, of grass, roots, and other materials, lining it with down plucked from their own bodies. Their instinct teaches them to conceal it among

stones, or in the long grass, or under bushes and in the hollows of decayed trees, though in many places their haunts are never disturbed by the presence of man. The female lays from twelve to fourteen cream-coloured and oval-shaped eggs. Unlike the swan or the brent goose, the goosander is seldom seen on the wing. It rises in the air with difficulty, and, except at its season of migration, prefers to dwell in its native element, where it gambols and swims and dives with equal dexterity and grace.

In all the Arctic seas, even in the farthest north, the voyager is sure to have the companionship of the Gulls. They are a numerous and ubiquitous family, apparently as well able to endure heat as cold, for they are found on the shores of every region. In the spring and summer they often penetrate inland, sweeping across the marshes and along the streams in search of worms and insects and larvæ; then, at the approach of autumn, returning to the coast, where they banquet greedily on small fish, on the spawn of crustaceous animals, or on the refuse left behind by the ebbing tide. They war incessantly among themselves; the larger kinds attacking the smaller, pouncing upon them as soon as they have caught a fish, and compelling them to yield their prize. They are easily known by their dark wings and white bodies, and by their easy, rapid flight. They swim with little exertion, and gracefully rise and fall with the swelling waves of ocean. Their voice is a strong, hoarse cackle, which, when the bird is on the wing, may be heard at a great distance.

There are various species of gulls, the Arctic gull, the kittiwake, and the beautiful snow-bird being the most

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COMMON SEA-GULL.

numerous. But these have a formidable rival in the blue gull, which is not less rapacious, while it is considerably stronger, than they are; hence the Dutch have given it the name of the burgomaster. But, says a writer, that sage magistrate uses his power, we trust, in a very different manner from his winged representative, who employs it for the purpose of wresting from his weaker brethren whatever he sees them possess and covets for himself. High in the clear blue air he hovers, or on some lofty ice-peak perches; until, fixing his keen eye on some delicious morsel, straight as an arrow he darts on its possessor, and forces it, whether fulmar, snow-bird, or *kittiwake*, to surrender its booty.

Reference must also be made, while we are gossiping about the Polar birds, to the elegant terns, which are found in immense numbers, and whose eggs afford a precious supply of food to the Arctic navigator; to the guillemots, whose tenacious downy skin is much used for clothing; to the sandpipers, the plovers, the grouse, and the ptarmigans. A species of the last-named bird inhabits the interior of Greenland, and is highly valued on account of the delicacy of its flesh. Like some other Arctic birds, the ptarmigan changes the colour of its plumage according to the season. It is a pure white in winter, so that it can hardly be distinguished in the snowy landscape; in the spring it assumes a garb of coloured feathers, which are again shed at the approach of autumn.

In a modern poet we find a graceful allusion to a bird of great celebrity, which frequents the more northern shores of Greenland :—

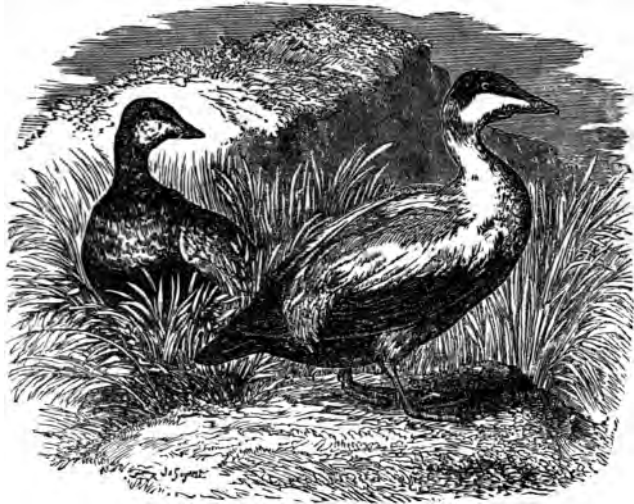
“And where those fractured mountains lift
O'er the blue wave their towering crest,
Each salient ledge and hollow cleft
To sea-fowl gives a rugged nest;
But with instinctive love is drest
The eider's downy cradle, where
The mother bird her glossy breast
Devotes, and with maternal care
And plumeless bosom, stems the toiling seas
That foam round the tempestuous Orcades.”

The Eider-duck is of considerable value to man, owing to the exquisite softness and beauty of its downy plumage; but it owes its fame, I think, to the graceful example it affords of parental tenderness.

It is a large and handsome bird. Dwelling on the shores of Northern Europe, it builds its bulky nest, lined

with down from its own breast, on the surf-washed shores of the sea, on wave-girdled islands, or on the turfy ledges of wind-swept cliffs.

The flight of the eider is steady, straight, and moderately rapid, and consists of a succession of quick beats. It



EIDER-DUCKS.

swims and dives expertly, and can remain for a considerable time under the water.

Its food consists of shell-fish, or, more correctly speaking, bivalve molluscs, which it obtains by dexterous diving, as well as of crustacea, fishes, and the roe of both. Its flesh is not bad eating.

The female lays usually five eggs. She lines her nest *with fine down plucked from her own breast.* It is of a

dark gray colour, and very soft and light. The Icelanders hasten to carry it off, as well as the new-laid eggs. The poor bird then robs herself of a second portion of her down, and lays a few more eggs, which are also seized. If this lining be taken away, she repeats the operation, and is also assisted by the male bird ; but should a third robbery be committed, both birds abandon the nest in despair, as if feeling that any further sacrifice would be useless.

I might continue for many pages to dwell on the habits and peculiarities of the Water Birds of the North, whether they belong to the Sitters, the Divers, or the Plungers. There are the Grebes, for instance, whose warm furry skin is much valued as a material for making muffs and pelisses ; so that your sister may protect her hands from the winter cold of Scotland or England in a muff made of the skin of a bird which does not fear the Polar storms. It is sometimes said of the female grebe that when danger threatens she lodges her nestlings on her back, and, thus lovingly loaded, swims away with great rapidity. I remember some lines which well describe her beautiful plumage,—

“ Her glossy breast
Sleek plumes of satin white invest,
Wave-proof ; and hangs her shoulders down—
Down, back, and wings, of dusky brown,
A mantling tippet.”

The grebe does not go so far north as most of the birds I have been describing ; not so far north as the Arctic Puffin, which may be found on the shores of Iceland and



PUFFINS.

Greenland—a quaint-looking bird, which always seems to have disguised his face with a mask in order to terrify assailants.

His bill is something enormous, and is painted in various colours: first, close to the base, a dull yellow; next to this, a grayish blue; and then, up to the conical sharp tip, a bright red. Yellow, blue, red! You may fancy how remarkable an appearance it presents with this harlequin-like combination of colours.

His plumage, however, is not nearly so bright and resplendent as his huge bill: the prevailing tints are gray, grayish white, and brownish gray.

It is a peculiarity of the puffin that he burrows or digs holes like the rabbit, instead of making a nest. Sometimes he saves himself the trouble of working like a "navvy," by taking possession of a rabbit's burrow. When on land he rests all his weight on his foot and heel, and consequently moves with an awkward, waddling gait;

but his awkwardness disappears the moment he regains his native element. He sits lightly on the water, and swims and dives with much celerity.


I have referred to the Terns,—or sea-swallows, as they are sometimes called, in allusion to the swiftness of their flight,—but I may add a few interesting particulars. They are birds very frequently found on all parts of the British coast, where they arrive in straggling, irregular flocks about the beginning of May, and immediately retire for breeding purposes to lonely, sandy tracts, and low rocks or ridges of gravel on the sea-shore. I have sometimes met with their nests in sequestered nooks on the Sussex coast—if a small pile of grass or sea-weed deserves to be called a nest. If you see a company of these birds on a sunny day hovering about a particular spot—now rising in the air, and now alighting on the ground—you may be sure that it is a favourite breeding locality. As you draw near, some of the birds will fly at you, as if they intended to strike you, and then wheel round, mingling their hoarse cries with the splash of the waves; but if you continue your approach, they all of them leave their nests, wheeling to and fro in a maze of wings, and incessantly repeating their shrill, monotonous clamour.

“When walking along the sandy shore,” says Macgillivray—the exactness of whose description I can confirm from personal observation—“with no bird nearer, perhaps, than a quarter of a mile, you may see one or two of them coming up from a distance, increasing their cries as they approach, then wheeling and plunging over and around you, and at length flying off. Proceeding at a moderate

elevation, they stop now and then, hover a moment, dip into the water, and secure a sand-eel or young coal-fish. Many attend on the fishermen or others who are catching sand-eels for bait or food, to pick up those which slip from them disabled. On such occasions they are very vociferous; as they also are when they have fallen in with a shoal of fry. They never dive; but I have often seen them alight on the water, and swim a little, and sometimes a whole flock may be observed reposing on the placid bosom of the waters, affording a very pleasing spectacle. They are very bad walkers, but on the wing their movements are easy and elegant. They skim along, boundingly, with great speed—ascend or descend—deviate to either side—stop short in an instant—hover in one spot like a hawk—drop, dive, or plunge headlong—with surprising adroitness. Their mode of flying, however, does not resemble that of a swallow; and they obtain the popular name of sea-swallows rather on account of their forked tail"—and, we think, their swiftness of motion in the air.

There are numerous species of terns: the Arctic tern, the common tern, the black tern, the roseate tern, the white-winged marsh tern, the whiskered marsh tern, and so on.

Of these, the Arctic Tern is a familiar bird along the shores of the Polar seas, where it breeds in large numbers. It is a brave little bird, and during the period of incubation will boldly attack any one attempting to interfere with its nest. This consists simply of a slight hollow in the sand or gravel of the beach. Captain Feilden, one of the naturalists to the British Polar expedition of 1875-76,



found eight or ten pair breeding in a small islet at nearly the highest latitude reached. The ground was covered with snow to a depth of three inches, yet in one of the nests a newly-hatched tern seemed lively and well in its cradle of snow. From the border of snow which was raised around the nest, two inches above the general level, it was evident that the parent birds had been assiduous in throwing the snow out of the nest as it fell. These birds feed on the smaller fish; and even thus close to the North Pole, there seemed to be an abundance of their favourite food in the pools between the ice-floes. When ice, however, covers all, the Arctic tern feeds on the minute crustacea which make their way to the surface through the cracks in the tidal ice.


So we take leave of them with some lines from Bishop Mant, whose accuracy as a naturalist equals his elegance as a poet:—

“ We note their congregated flight—
Now soaring up the aerial height,
Now pouncing on the fishy main,
Now wheeling round and round again.
Th’ ear-piercing clamour, loud and shrill,
The slender head, the auk-like bill,
The pinions’ pointed length of sail,
The tapering form, the forked tail,
The motions nimble, light and free,
That mark those ‘swallows of the sea.’ ”

The land birds frequenting those regions of ice and snow are few in number, but they include many highly interesting forms, of which some notice must here be taken.

Many small birds with which we are familiar in Britain, can only be regarded as summer, or, it may be, as winter visitors. Thus the swallow prefers our moist, genial summer to the sultry, insect-killing heat of the tropical

lands where it spends its winters; while the snow-bunting, the turnstone, the knot, and many others, seek our shores in winter, where they find a much milder climate than in the land of their nativity. The snow-bunting, though it visits this country in winter, builds its nest on the shores of the Frozen Ocean, and there rears its brood. The latter, as soon as the short Arctic summer begins to draw to a close, set out on their southward journey, followed a little later by the parent birds, who seem to linger fondly around their Arctic home. The arrival of these birds in large flocks in the north of Scotland is regarded by the country people as the harbinger of a severe winter. Very different are the feelings with which their reappearance within the Arctic Circle is hailed by Polar travellers. "Residents in temperate climes," says Sir George Nares, "who enjoy throughout the year the presence of many birds with their joyous notes, can scarcely realize the feelings of the sojourner in Arctic wilds when the first notes of the snow-bunting, harbinger of summer and of returning warmth, awaken in him vivid recollections of the far-off south. With such a one the snow-bunting must ever remain an especial favourite; and the preparations of this sweet songster for a departure to more genial regions are a reminder of approaching darkness and the monotony of an Arctic winter." In its native haunts the snow-bunting is very tame. A nest containing four young snow-birds was once discovered by Richardson on the ground where his men were removing some drift timber from the beach. Care was taken not to injure them; and while the party was seated at breakfast, only two or three feet from the



nest, the parent birds made frequent visits to the nest, at first timidly, but afterwards with the utmost confidence, carrying grubs to their young. Unlike most of the small birds, it does not perch, but runs on the ground like a lark—a bird to which it bears in other respects a striking resemblance.

Another of the birds which visit the shores of Britain in large flocks, to spend the winter with us, is the Knot. The flocks of knots were at one time supposed to come from Iceland, but they are now known merely to pass through that island in their passage from more northerly regions southwards. Their breeding-grounds are on Melville Island; and they extend as far north as man has yet been able to reach. They are exceedingly wild and difficult of approach in their breeding-haunts, contrasting strongly with their tameness—which, however, may arise from exhaustion—when they first reach our shores.

Other two winter visitors to Britain from the Arctic Regions are the Turnstone and the Sanderling. The former owes its name to the curious habit it has of turning over small stones, with its stout thick beak, in search of the marine insects on which it feeds. The food of the sanderling is exactly similar, but is obtained in a different way—namely, by probing the sand with its long slender bill, an instrument which it inserts with great rapidity and to a considerable depth in a sufficiently soft material.

The “birds of prey” are represented by such bulky forms as the Snowy Owl and the Bald Eagle. The former, unlike other owls, hunts its prey in the day-time, as otherwise it could not subsist throughout the Arctic summer,

which, although short, is one continued period of daylight. It is highly predaceous, feeding on animals of all sorts. It follows the lemmings in their as yet unexplained migrations, often beyond its proper latitude, and succeeds in greatly thinning their ranks. It accompanies the sportsman on his grouse-shooting expeditions, and skimming down upon the shot bird, carries it off before the rightful




THE SNOWY OWL.

owner can get near. According to Wilson, it is also a dexterous fisher, grasping its finny prey with an instantaneous stroke of the foot, as it sails along near the surface of the water, or as it sits perched on a stone in a shallow stream. It feeds also on hares, and to such an extent that the common name for it in Sweden signifies "hare-catcher." Its nest is usually built on a ledge of rock, and consists of

moss or lichen, and a few feathers; but sometimes the eggs lie on the bare ground. These number from six to eight, but it is a curious fact that they are not all laid at the same time, two of them at least being hatched before the last one is laid; thus, according to a recent writer, "you may find in the nest young birds, and fresh eggs, and others more or less incubated." The parent birds do not hesitate to attack any one approaching their nest; and among the Laplanders—owing, no doubt, partly to exaggerated stories of its attacks on wayfarers, and partly also to its strangely weird appearance—it is regarded with no small amount of superstitious dread.

The Bald Eagle of North America is as much at home among Arctic snows as it is in the woods and on the river banks of the United States. It resembles the golden eagle considerably in appearance, but is much bolder and more rapacious. It feeds on other birds and on the smaller quadrupeds, and when hungry will eat carrion. Thus it has been known to attack the vulture in the air, and having forced the latter to disgorge its food, has snatched it up before it reached the ground. Its favourite food, however, is fish, which it takes alive; and for this purpose it frequents rapids and cascades, where the fish are readily got when attempting to ascend the rivers to their spawning grounds. He also obtains fish by robbing the osprey or fishing-hawk of its finny prey. How he effects this has been vividly described by Wilson, the poet and ornithologist. As the eagle sits and looks down from some lofty eminence upon the meaner birds—the gulls, the ducks, and the cranes, all seeking for his favourite food



in the watery element beneath—he suddenly sees the osprey settling over some devoted victim of the deep. “His eye,” says Wilson, “kindles at the sight, and balancing himself with half-opened wings on the branch, he watches the result. Down, rapid as an arrow from heaven, descends the object of his attention, the roar of its wings reaching the ear as it disappears in the deep, making the surges foam around. At this moment the eager looks of the eagle are all ardour, and levelling his neck for flight, he sees the fish-hawk once more emerge, struggling with its prey, and mounting in the air with screams of exultation. These are the signals for our bird, who, launching into the air, instantly gives chase, and soon gains on the fish-hawk. Each exerts his utmost to mount above the other, displaying in these *rencontres* the most sublime aerial evolutions. The unencumbered eagle rapidly advances, and is just on the point of reaching his opponent, when, with a sudden scream, probably of despair and honest execration, the latter drops the fish. The eagle, poising himself for a moment as if to take a more certain aim, descends like a whirlwind, snatches it in his grasp ere it reaches the water, and bears his ill-gotten booty silently away to the woods.” No wonder that Benjamin Franklin, as he contemplated this rapacious sea-robber tyrannizing over the weaker members of its order, wished that his countrymen had chosen some other bird than the bald eagle for their national emblem.

We have suffered this aerial freebooter to entice us beyond the confines of the Frigid Zone. But in Iceland we once more touch the Arctic Circle. True it is that the



BALD EAGLE AND FISH-HAWK.



larger portion of that frost-bound isle lies south of the magic boundary ; but the nature of its climate and the character of its scenery unmistakably stamp it as belonging to the Polar World. Here, indeed, the powers of winter seem to rule uncontrolled. Its interior presents such a picture of desolation as no other part of the known world can equal. Vast and dreary plains of black, rugged, and broken lava ; swollen streams rolling onward through frozen plains ; deep crevasses, which seem to open into the nether regions of the earth ; pools of boiling water, which fill the air with a blinding mist ; geysers, or leaping fountains, which issue from snow and ice to hurl aloft their ebullient, hissing, seething jets ; huge caldrons of bluish mud, which reek with sulphureous stench ; lofty jökuls, or masses of frozen snow ; and volcanoes, which are more or less active, and the sides of which are loaded with colossal glaciers. Not more than one-eighth of its entire surface is habitable ; and a considerable area has never been, and, owing to the masses of ice and the rent and twisted lava-fields, cannot without danger be, traversed.

No other country contains so many natural phenomena within so limited a compass. The peculiarities of its mountains are many and surprising. In two great ranges, they strike across the island from north-east to south-west, separated by a longitudinal valley nearly one hundred miles in width. Their summits are rounded like huge domes, though the extraordinary regularity of their configuration is almost hidden by the overhanging precipices of volcanic matter and the deep ravines that furrow their sloping sides. Under a calm, cold mask of ice, these

mountains conceal the "fiery germs" of terrible convulsions: such as Hecla, which in seven centuries twenty-three times broke out into violent eruption; Skapta Jökul, which in 1783 overwhelmed leagues upon leagues of land with molten lava; and Krabla, which on one occasion poured such a quantity of lava into the lake Myrvatn, that, though this basin measures twenty miles in circuit, the water boiled for many days.

Huge glaciers, several miles in length, descend from some of the mountains into the lowlands, rendering vegetation impossible.

The longitudinal central valley of which I have spoken is therefore one tremendous desert, abandoned to silence and solitude; a scene of everlasting battle between the opposing powers of Fire and Frost. It should be said, however, that Captain Burton, in his "Ultima Thule," declares this picture exaggerated.

If we turn to the coast, the picture is scarcely less dismal. For the greater part of the year it is beset by enormous fields of ice, descending from the Polar Sea. Its outline is broken up by gloomy fiords, which strike inland for many miles, and divide into endless branches. Here, between walls of rock a thousand feet in height, the ledges of which are tenanted by myriads of ocean-fowl, the sea lies deep and still.

These inlets, however, run up into the green valleys, where alone in all Iceland vegetation finds a resting-place. Their slopes are enriched with willows and junipers and birch-trees, mosses and lichens carpet the rocks, and the scanty meadows afford a pasture for the horses, cattle, and



AN ICELANDIC LANDSCAPE.



sheep of the inhabitants. On their borders herds of reindeer find their sustenance.

From this brief sketch of Iceland the reader will be prepared to learn that animal life is not very plentifully manifested. The rivers teem with fish ; in the neighbouring seas the whale and the porpoise disport, and shoals of herrings glance with silvery scales through the dark-green waters. Otherwise, the principal members of the Animal World are the sea-fowl, which we have already described, the gyrfalcon among birds of prey, and among the game-birds which visit the island are the curlew, the plover, and the ptarmigan.

The Greenland Falcon, or Gyrfalcon, which in the days of falconry was probably the most highly prized of all the birds of sport, abounds not only in Iceland, but also in the inhospitable regions surrounding Baffin Sea, where it may be seen seated on lofty rocks, watching for the ptarmigans, which form its principal food, although it also destroys great numbers of plovers, ducks, and geese. The plumage of the adult bird is sufficiently white to enable it to move about without alarming its prey ; and when it pounces unexpectedly upon a flock of ptarmigans, the latter instinctively dive beneath the snow, where they are greatly protected by the snow-white colour of their plumage.

The Greenland falcon is the most powerful of the falcon tribe ; and while the more abundant peregrine was employed in hunting smaller game, as hares and rabbits, the rarer and stronger species was reserved for flying at such birds as cranes and herons. In defence of its home and family it is not afraid to attack man, and Sir John Richardson

describes how he was thus attacked by a pair of these birds as he was climbing in the vicinity of their nest, built on a lofty precipice. They flew in circles, uttering loud, harsh screams, and alternately swooping with such velocity that their motion through the air caused a loud rushing noise, striking their claws within an inch or two of his head. By keeping the barrel of his gun close to his cheek, and suddenly elevating its muzzle when they were in the act of striking, he endeavoured to ascertain whether they had the power of instantaneously changing the direction of their course, and he found in every case that with the quickness of thought they were above the obstacle—showing their power of motion to be equal to their extraordinary acuteness of vision. Its power of flight is truly remarkable, and this is probably the reason why at the present day it is so widely spread; for it occurs along the entire northern sea-board of America, in Japan, and also, though less common, in Siberia. Great flocks of them in their almost snow-white plumage wing their flight annually to Iceland, where in former times the kings of Norway and Denmark obtained their supplies of hunting gyrfalcons.

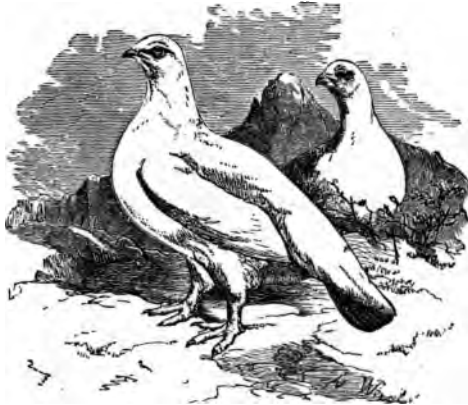
The wild plaintive cry of the Curlew frequently breaks the silence of these frozen solitudes, as it flies from its rocky eyrie to skim the ocean-wave; or the echoes repeat the hoarse croak of the white Ptarmigan—that

“Snow-white bird, of bloodless beak,
Rushing wing, and rapid eye.”

The plumage of this beautiful bird is subject to the same variation of colour as the fur of the ermine. In summer

it presents a mixture of black, yellow, white, and gray, resembling the tints of the mossy, lichen-covered rocks and stones among which it loves to hide; but this becomes whiter as the season advances, and at last can hardly be distinguished from the winter snow.

The ptarmigan is a bird of the heights, of the lonely mountain-peaks and craggy precipices, where almost its only



PTARMIGAN.

companions are the mighty eagle, whose keen eye gazes undazzled on the sun; or the gray hare, which darts like an arrow down the rugged mountain-side. It shuns the valleys and the plains, and has no liking for the sunny South.

“What a wild, free life is thine,
Whether on the peak of snow,
Or amid the clumps of pine!
Now on high, begirt with heath—
Now decoyed by cloudless weather
To the golden broom beneath,
Happy with thy mates together!”—

for the ptarmigan is a gregarious bird and loves the society of its own kind.

Plovers, like the ptarmigan, frequent the mountain solitudes of Iceland. They are distinguished by their mellow but melancholy cry, and their affection for their young. To protect the latter from the approach of an intruder, the female resorts to a pretty stratagem. When you draw near her nest—which she generally builds among the gray moss and lichens of the moorland swamps—she crouches down as low as possible to avoid detection. As soon as she finds that, spite of all her efforts, she has been discovered, she runs some distance before she takes flight; and when fairly on the wing, cries plaintively, and flutters and labours in the air, to the end that, thinking her wounded and easy of capture, you may be enticed in pursuit. Then, when she has drawn you so far from her nest as to render its discovery unlikely, up she springs, with a bold, swift, steady flight, and leaves you to bear with what patience you can muster your disappointment.

Though a cautious bird, she may, however, be drawn within range of the fowler by an imitation of her deep-toned, plaintive, and somewhat monotonous whistle.

The gray plover is found in Labrador as well as Iceland, and is a summer visitor to many parts of the United States; a bird of strong, swift, and sustained flight, which moves to and fro in large and compact battalions, and feeds upon worms, small shell-fish, and marine insects.



We need the wing of the plover to support us in our

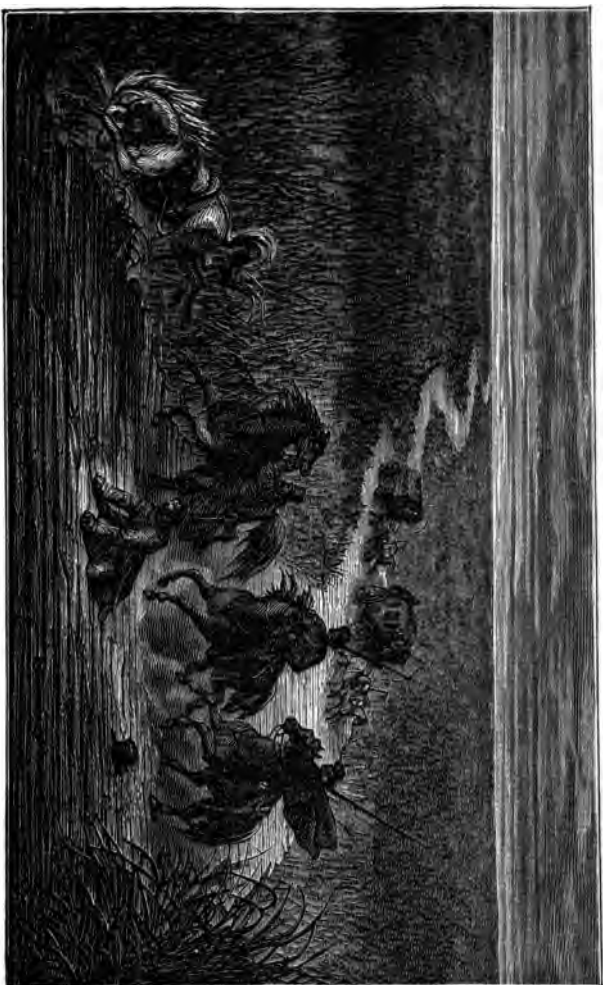
flight along that imaginary line of the Arctic Circle which marks the southward boundary of the Frigid Zone.

Polar America we have seen, and Greenland, and Iceland, and parts of Siberia ; we now arrive at the north-western angle of the great American continent, formerly called Russian America, but since it was ceded to the United States known as Alaska. Its principal resources are its fur-trade and its fisheries. Of the former we need say nothing, having already introduced the reader to the sea-otter, the marten, and the sable. The rivers abound with fish, and especially with noble salmon, which are caught in great quantities as they migrate from the rivers to the ocean. For the salmon is a fish with *two lives*: one half of the year it lives in salt and the other half in fresh water. It is said that the salmon is so plentiful in the streams of Alaska in the spring time as actually to impede the passage of boats ; and when a strong south-east wind blows, it drives them ashore, where they lie accumulated in putrescent heaps. Salmon is, of course, the staple food of the native inhabitants, which they vary occasionally with bear-meat and deer-meat.

This, too, is the diet of the wandering Tchuktchi, an important part of the population of Eastern Siberia. They have other delicacies, however, for wild geese are plentiful ; and, when moulting, are driven ashore by the natives, and knocked on the head by others who have been posted purposely to receive them with so rough a welcome. They keep large herds of reindeer, and are skilful and persevering hunters,

Siberia is a word of wide meaning, the territory to which it applies ranging from the North Pacific to the Ural Mountains in one direction, and from the Altai range to the Polar Sea in the other. Its entire area cannot be less than 7,000,000 square miles; and consequently, it strikes far south as well as north of the Arctic Circle, and is included within the North Temperate as well as the Frigid Zone. Consequently, too, it presents a great variety of surface, increasing in fertility as it comes more and more within the influence of warm suns and genial breezes. Along the base of the Ural and Altai chains extends a tract of good pasture ground and excellent arable land, while the valleys are usually clothed with an abundant vegetation.

But when we extend our survey beyond the sixty-second parallel of latitude, how gloomy is the prospect! Over the inhospitable wilderness blow the deadly winds that have their origin in the recesses of the Icy Sea. Leaving behind us the pathless fir-forests, we come upon "a wide-spreading desolation of salt steppes, boundless swamps, and lakes of salt and fresh water." So intense is the cold that the porous soil is perpetually frozen to a depth of several hundred feet; and though the surface is thawed by the summer heat, it freezes again by the middle of September, and for nine months of the year lies dead and still under a burden of heavy snow. The Russian traveller, Wrangel, in a well-known passage describes the awful waste which spreads from the mouth of the river Kolyma to the shore of Behring Strait. Interminable snows and ice-bound rocks limit the sombre horizon, and Nature lies buried in



TRAVELLING IN THE STEPPES OF SIBERIA.



an almost perpetual winter. Life is an incessant struggle with privation and the terrors of cold and hunger in this grave of Nature, which seems to contain only the bones of another world. The traveller, and even the snow, throw off a constant cloud of smoke ; and this evaporation changes into millions of needles of ice, which crackle in the air like torn satin or thick silk. The reindeer betake themselves to the forests, or crowd together for the sake of warmth ; and only the dark winter-bird, the raven, still cleaves the icy air with slow, laborious wing, leaving behind him a long line of thin vapour to indicate the track of his lonely progress. With a loud noise crack the trunks of the thickest trees ; masses of rock fall from the rugged precipices ; the ground in the valleys splits into yawning fissures, from which a dense vapour is constantly rising, and freezing as it rises. Meantime, the pervading silence of the winter is disturbed by the howling of the dogs, which burrow in the snow outside the rude huts of their masters.

In such a region animal life is at its minimum. The reindeer is almost the only quadruped of any importance ; and man would scarcely have been tempted to settle on its dreary borders but for the fur-bearing animals which in the forests and less rigorous parts are so abundant.

Besides the Tchuktchi, Siberia is inhabited by three great races,—the Samoiedes, the Ostiaks, and the Yakouts.

The first-named are scattered along the shores of the Frozen Sea, in the government of Archangel ; and in Siberia, in the governments of Tobolsk and Tomsk : they are supposed to be connected with the Finns of Europe in origin. Like all the northern peoples, they are below the

medium stature. The features of the countenance markedly recall the well-known Hindu type, for the forehead is



A SAMOIEDE FAMILY.

moderately high, the hair black, the nose long, the mouth well shaped. A cruel and treacherous disposition is

revealed by the eye deep-sunken, and veiled by a heavy lid.

Travellers give no favourable report of their manners, which they describe as brutal ; nor of their temperament, which they describe as capricious. They are suspicious, fierce, and cunning. As for their avocations, they are shepherds, hunters, traders, and, whenever opportunity offers, robbers. They breed and train large herds of reindeer ; feed upon the flesh and drink the milk of the reindeer ; and clothe themselves in the reindeer's skin. They shave off their hair, except a tolerably large tuft which they allow to flourish on the top of the head ; and their beard they pluck out by the root as fast as it grows. The women show that passion for ornament which is common both to the civilized and the savage, and deck themselves gaily with beads of glass and metal, and a belt of gilded copper. The majority of them are heathen, worshipping the sun and moon, the water and the trees ; in truth, they seem to adopt as a deity any object that is wonderful or curious, or particularly attracts their attention ; and, more particularly, they adore the bear, offering all manner of prayers and sacrifices to him before they undertake an expedition to slaughter him and his kind.

A very similar form of heathenism prevails among the Ostiaks and the Yakouts, who inhabit the northernmost districts of Siberia, from the Ural Mountains to Kamtchatka. It is forbidden by the Russian Government, but secretly flourishes to a great extent. Objectively it consists of a series of epileptic contortions performed by the

worshippers before some chosen tree—generally a larch—in the wildest and densest recess of the forest. Further: every Ostiak, or almost every Ostiak, carries about with him a rude image of the god he adores under the name of *Schaitan*; though this does not prevent him from wearing on his breast a small copper crucifix. The *Schaitan* represents the human figure, carved in wood; or, more correctly speaking, rudely cut out of a fragment of wood. It is of different sizes, according to price, or the various uses for which it is intended. If for wearing on the person, it is small; if for decorating the hut, it is of respectable dimensions: but whether small or great, the god is clad in seven pearl-broidered chemises, and suspended to the neck by a chaplet of silver coins. This wooden deity occupies the place of honour in every dwelling; and its pious votaries, before beginning a repast, are careful to present it with the daintiest morsels, smearing its insensible lips with fish or game, nor will they satisfy their hungry appetites until they have accomplished this unmeaning rite.

The Ostiaks have a separate caste, a priesthood, the members of which are called *Schamans*. Their influence is very great, and they avail themselves of it to maintain the existence of the grossest superstition to their personal advantage. In the icy deserts of Siberia, as in more favoured regions, ambition and selfish greed oppose the introduction of that knowledge and that science which would release men from their unworthy subservience.

The Polar bear finds in the Ostiak and the Samoiede his *most* intrepid and persevering enemies. He is also the

object of the pursuit of the Yakouts, a tribe dwelling in close neighbourhood to the Bouriards, and partaking as they do of the Mongolian race-characters. They seek, however, to capture the bear alive, rather than to kill him ; and one traveller asserts that she saw a large company of bears being conducted to Bérézov, like a herd of domestic cattle, and not less obedient and inoffensive ! Madame Felinska, however, has not described the process by which the Yakouts obtain such a mastery over an animal so remarkable for its power and fierceness.

It is certain that in the chase of the white bear these savages exhibit the utmost daring,—sallying forth to encounter him with no better weapon than a hatchet or a long cutlass. The risk they run is formidable, if they do not kill him with the first blow. In the event of missing his stroke, the hunter's sole resource is to fall to the ground and lie motionless, until the bear, while smelling the supine body and curiously turning it over, incautiously offers himself to a more successful thrust.

If we glance at Lapland, which fairly comes within the range of the Polar World, we shall find that it offers no other forms of animal life than those with which we have already made acquaintance. The monotony in the Frigid Zone is very great ; its snowy wastes and its icy seas offer few opportunities for the development of variety either in animals or plants. The conditions of soil and climate being everywhere nearly the same, the living forms accustomed to them must also be nearly the same. Between the climate of Greenland and that of Siberia, for instance, the

difference, so to speak, is one of *degree*, not of *kind*. The summer may be a little longer or a little shorter; the winter may be somewhat more or less rigorous: but at all events the summer in both parts will be exceedingly brief, and in both the winter will be marked by the most formidable severity. Thus, then, for the Lapps as for the Eskimos, the all-sufficing animal is the reindeer, and both Lapps and Eskimos obtain their scanty subsistence by fishing and the chase.

In the south of Lapland, however, we come upon the great forest-region, where prowls the fierce and treacherous wolf.

Of the Lapps themselves it may justly be said that they are rather slow, ignorant, and uncultivated, than *savage*. An extremely cold climate absorbs all the energies of man in devising means for his protection against the cruelty of Nature, and in cherishing within his frame the feeble spark of life; so that he lacks the power and the inclination to develop his mental faculties. They lie torpid; they slumber unthought of and uncared for; while all the force and strength of the body are employed in obtaining a sufficient sustenance to enable it to continue its weary struggle against the elements. Thus the Lapps, though on the one hand in frequent contact with the Russians, and on the other in constant intercourse with the Swedes, are without the most rudimentary art or science, without industrial resources, and with no other commerce than that which is supplied by the products of the chase, the spoils of their fisheries, or their herds of reindeer. Even religion seems unable to attain a vigorous life in the snowy



FISHER LAPPS.

wastes of Lapland. The Lapps were converted to Christianity about two centuries ago, but it has had no awakening influence upon them, morally or intellectually. And as all their religion is embodied in oral tradition, the devo-

tion of a Lapp may be said to depend on the strength of his memory. As for education, the standard hitherto attained is so low, that a Lapp who knows his alphabet holds among his fellows a similar rank to that which an Oxford or a Cambridge graduate holds among ourselves.

A recent traveller furnishes some interesting particulars respecting this curious people :—

The race of the Lapps, he says, is constantly diminishing in numbers. Both their language and their physiognomic type show that they are of Asiatic origin. Some are fishers, and dwell upon the coast ; others are shepherds, who traverse the mountains in every direction, pasturing their reindeer on the fields of moss. During their three months' summer they lead their herds into the more elevated regions, to withdraw them from the excessive heat and the plague of mosquitoes ; in winter, they bring them back to their own villages, in order to protect them more effectually against those hated enemies, the wolves, of which the Lapps never speak except in language of the most intense bitterness.

The wealth of the Lapp consists in his herd ; it feeds him, clothes him, and supplies him, by way of barter, with brandy and tobacco, the only objects of his desire, and the only enjoyments of his melancholy life.

Yet that life, in its absolute freedom, is not without a certain charm. Accustomed from infancy to endure fatigue and privations of every kind, the Lapp is almost exempt from physical suffering. His body acquires an extraordinary degree of vigour, and most of our maladies are *unknown* to him. If during a journey a child is born, the

mother places her infant in a piece of hollow wood, in which a hole has been cut to receive the little one's head ; then strings this rude cradle—which is lined with reindeer-moss and fastened across with thongs of reindeer-skin—on her back, and resumes her journey. When she halts, she hangs her cradle to a tree at a height which protects it from the attack of beasts of prey.

But there is another side to the picture. The old age of the Lapp is pitifully wretched ; and when the time comes that his failing strength renders him incapable of joining in the chase, his children abandon him by the wayside, with only provisions enough to support him for a few days. There he is left to die of hunger or cold ; and it is said that the traveller through the birch-forests of Lapland will frequently encounter the skeletons of men who have perished in this miserable manner.

The hut of the Lapp is rudely built of wood ; in the interior the curved ribs, or beams, converge to a central opening which serves instead of chimney, the fire being lighted on the floor in the middle of the hut. The outside covering is of turf. On one side of the hut is the wooden door. The occupants recline on skins, with their feet towards the fire, and on a row of stones near the wall are disposed their various utensils. The habitation of the Lapp, like his person, is never very clean.

Although warm-blooded animals specially adapted for aquatic existence, as whales and seals, occupy those Northern Seas to an extent altogether unknown in temperate and tropical waters, yet their presence does not

seem to have interfered with the existence side by side with them of an abundant fish life. Of these the Shark, *Chimæra*, and Bullheads are specially noteworthy.

The Greenland Shark is one of the largest fishes known, measuring sometimes over fifteen feet in length. Its teeth, however, are by no means so formidable as those of many smaller species, nor is it so ferocious in disposition as its enormous bulk might lead one to expect. It has never been known to attack man, although whale-fishers have often fallen into waters where it abounded. Their food consists almost wholly of the flesh of the whale, in pursuit of which it shows the utmost persistency. According to Captain Scoresby, who has given the only account extant of the ways of this creature, it bites and annoys the whale while living, and feeds on it when dead. "It scoops," he says, "hemispherical pieces out of the whale's body, nearly as big as a person's head, and continues scooping and gorging lump after lump until the whole cavity of its belly is filled. It is so insensible of pain that though it has been run through the body with a knife, and escaped, yet after a while I have seen it return to banquet again on the whale, at the very spot where it received its wounds." When intent on its cetacean food it seems totally insensible of the presence of man, and does not draw back even when forcibly reminded of his presence by the entrance of a knife or lance into its body. This apparent stupidity on the part of the Greenland shark has led sailors to believe that the creature is blind. Like all sharks it is exceedingly tenacious of life, the heart beating *for hours* after it is taken from the body; and Scoresby

remarks that it is unsafe to trust the hand in its mouth even after the head has been severed from the trunk. Although an Arctic species, the largest specimen known was caught a few years ago at the entrance to the Firth of Tay, where it had got entangled in the fishermen's lines. It measured fifteen feet six inches in length, and nine feet in girth.

At the present time there is a considerable shark-fishery off the North Cape, carried on chiefly by the Norwegians. They anchor their craft in deep water by means of a light cable, which they immediately cut should a storm come on. The sharks are caught with a baited hook, and hauled up on deck by means of a windlass, when they are beaten on the head until motionless. The liver, which is all that is wanted by the fishermen, is then cut out, the entrails are inflated with air, and the creature is thrown overboard to float away from the vessel. "The cause of this apparently wanton cruelty," says Professor Newton, who recently visited the fishery, "is alleged to be the difficulty of otherwise disposing of the carcass; for the fishermen say that if the animal were killed, they would never catch another shark until the dead one was entirely eaten up by his brethren,—a process which might involve a delay of some days."

The Arctic Chimæra or Rabbit-fish is sufficiently grotesque in form to have suggested the application to it of the name of one of the fabulous monsters of Grecian mythology. To a long snake-like body is added a massive lion-like head, with a dorsal fin the long rays of which give it the appearance of a mane. On the top of the head

there is a horn-like projection, surmounted by a tuft of slender threads, which has been fancifully likened to the crown of the "king of beasts." It is a rare fish, and when seen is usually in pursuit of shoals of herrings—a circumstance which has led to its being known also as the "king of the herrings." It measures about three feet in length, and, though allied to the sharks and skates, it cannot be classed with either the one or the other, but finds its nearest ally in the Southern chimæra, a fish which is only found in Antarctic waters.

The Bullheads are a group of fishes very abundant in Arctic seas. They owe their name to the ferocious aspect of the head, which is very large in comparison with the rest of the body, their fierce appearance being greatly heightened by the numerous horns and spines with which their head and gills are furnished. The Greenland Bullhead has four short horns on the upper part of the head, and eight spines on each side of the face and shoulders. It need hardly be said that it is a highly predatory species, attacking fish larger than itself, but doing special execution among young salmon, herring, and haddocks. It seems, however, to be omnivorous, devouring crabs, worms, and, in short, whatever comes in its way. It keeps to the bottom of the sea, unless led to the surface in pursuit of its prey. Its extreme voracity leads to its easy capture by the Greenland Eskimos, by whom it is so highly esteemed as an article of food that they are said to eat it daily, boiled or dried. They capture it with the hook, which needs no other bait than some shining thing attached. *The Four-horned Bullhead* is a fish still more widely dis-

tributed over the Arctic Regions, occurring along the whole northern sea-board of Europe, Asia, and America. It was found by Sir G. Nares beyond the eighty-second degree of north latitude, no salt-water fish having ever been found beyond this. It is a rapid swimmer, but takes its prey usually by lying in ambush among seaweed, and seizing the unsuspecting blennies as they pass near it.

Of all the collections of different classes of animals brought home by the two naturalists attached to the late British Polar expedition, that of insects was the most surprising. Strange to say, in those regions of almost eternal snow insects were found in unexpected abundance, and the greatest number of these belonged to a group which we usually associate with warmth and sunshine,—namely, Butterflies, many of them closely akin to such “as one might expect to meet with in a summer day’s walk in England.” The Arctic summer is short, and a month or six weeks must be the full term of life meted out to these fragile creatures. Short, however, as it is, there is uninterrupted daylight while it lasts; and at all times during the twenty-four hours, provided the sun be not obscured, butterflies of diverse kinds—clouded yellows, coppers, blues, and fritillaries—may all be seen on the wing. Two species of humble-bees were also found in those regions, extracting honey from the flowers of a lousewort, in return for which they would no doubt be instrumental in fertilizing the seeds. Another kind of insect found almost as abundantly in Arctic lands as within the Tropics is the Gnat, which, especially in Lapland, fills the air during the short,

hot summer in countless myriads, and with their minute but irritating stings render the life of the Laplander a burden to him. So great is this insect plague that it is usual for the Lapp, before venturing out of his tent, to smear his face and hands all over with a mixture of cream and tar, in order to ward off the attacks of these persistent pests. It is no doubt owing to the comparative abundance of insect life in the far North that so many of the small insectivorous birds which migrate from our shores to spend the summer within the Arctic Circle find food for themselves and their young.

THE ANTARCTIC REGIONS.

The great attention which has been for more than two hundred years paid to Arctic exploration is in marked contrast to the almost total neglect of the regions surrounding the South Pole. Many circumstances have conspired to bring about this result. All the enterprising maritime nations belong to the Northern Hemisphere, and it was the desire which they had to find a safer and a shorter way to the rich countries of India and China than that afforded by rounding the "Cape of Storms" that led them, in spite of repeated failure, enormous hardships, and considerable loss of life, to prosecute the quest for a North-West Passage. The hope of finding such a passage as would be of any practical use has been long since abandoned, and now those same countries continue to fit out and despatch Arctic expeditions for no other purpose than that of scientific discovery. The bulk, too, of all the great continents

is situated in the Northern Hemisphere. These rapidly thin away on the other side of the equator, as is seen in South America, Africa, and India, leaving between them and the South Pole a vast waste of waters, very sparingly studded with groups of rocky and, for the most part, uninhabitable islands. The waters of the Southern Ocean are not land-locked, as are those at the opposite pole; there the winds have free course, the Southern gales being of the most terrific nature, resembling, says a navigator who had experienced them, more an earthquake than a storm at sea.

The great icebergs given off by what one of the seamen under Sir J. Ross aptly termed "the grandfather of all the icebergs,"—namely, the great Southern ice-barrier,—meeting with no land obstacle to their course, float in all directions throughout these Southern Seas. They sometimes even penetrate into warmer regions, diffusing a chill wherever they go, and forming a constant source of danger to navigation. The Southern icebergs do not usually assume the fantastic forms so characteristic of those met with in Northern latitudes: they are much more massive, resembling, according to one eye-witness, huge twelfth-cakes well sugared; the sides of a delicate blue, increasing in the fissures and cracks to an intense cobalt; large enough to blot out the entire city of London were one placed on the top of it, and high enough to reach the summit of the Monument. The height of an iceberg above water, however, only represents about a fourth part of its entire thickness, three-fourths of it being submerged beneath the waves.

Whatever be the explanation,—and on this point

there is considerable difference of opinion in the scientific world,—it is an undoubted fact that it is much colder in the Antarctic than in the Arctic Regions. In the latter the summer, although brief, is so hot as often to melt the pitch on the sides of ships; while in the former, raw fogs and gales abound at all seasons. Captain Forster, of the *Chanticleer*, who spent several months at Deception Island, in the Southern Ocean, and in a latitude corresponding to that of the Faroe Islands, states that at midsummer the fogs were so frequent and thick that for ten days neither sun nor stars were seen, and so intensely raw and cold was the air that it was considered as severe as the Arctic winter by those of the crew who had experienced the latter. While the *Erebus* and the *Terror* were exploring the same latitudes in the height of summer, the spray, as it flew over the ships, froze before reaching the deck or rigging, and incrustated everything with ice. The conditions being so unfavourable, and the discoveries that were likely to be made being more of scientific than of commercial value, it is not wonderful that South Polar expeditions have not been numerous.

Among the various navigators who have extended our knowledge of the Antarctic Regions, Sir James Ross stands conspicuous, he having penetrated further south than any other, and having discovered several portions of what may yet prove to be a great Southern continent. On one of these fragments were seen two snow-clad mountains, ten thousand and twelve thousand feet high respectively,—the lower, named Mount Terror, being an extinct volcano; while the higher, Mount Erebus, was a magnificent vol-



MOUNT EREBUS.




cano in full activity, the flames shooting out and casting a strange, lurid glare over the surrounding snow, while the smoke rose in a perpendicular column two thousand feet above the mouth of the crater. The southward advance of the expedition under Ross was stopped by a great and apparently unbroken barrier of ice, which he describes as forming a perpendicular cliff between one hundred and fifty and two hundred feet above the level of the sea, perfectly flat and level at the top, and without any fissures or promontories on even its seaward face. What was beyond it he could not imagine, as, being higher than the mast-head, nothing was seen except the tops of a lofty range of mountains. These form the most southerly land yet seen. Along this ice-barrier the twin ships sailed, day after day, in hope of reaching the corner, round which they might proceed southward ; but this they had not yet found, when the presence of pack-ice caused them to desist. In presence of this huge glacial cliff, Ross—who, as one of the sledge party under Parry, had reached nearer the North Pole than any of his predecessors—is said to have remarked that never until then had he seen ice. From the stones and other land *débris* which are found attached to the bottom of the icebergs, as they break off from the great ice-barrier, there is little doubt that the latter is formed on dry land and is gradually being pushed out to sea,—an action similar to that which is also going on at the present day along many parts of the Greenland coast.

In a region where there is so little land, and that little consisting merely of rocky islets, and of shores undefined and undefinable from the thick cap of ice which lies upon

and sometimes even overlaps them, the existence of organic life on land, whether plant or animal, is almost impossible. The sea in this region is the great storehouse of life,—the plants are seaweeds ; the mammals, whales and seals ; and the birds, aquatic.

There are several species of whales, the most valuable for its oil and whalebone being that known as the Antarctic Smooth-backed Whale. It is smaller than its great Northern congener, the Greenland whale, but is equally rich in blubber. This species, however, abounds chiefly in the temperate Southern latitudes, where the fishery is carried on with great energy chiefly by Americans. The Sperm Whale is also found in Antarctic waters, but, like the preceding species, it is more properly regarded as an inhabitant of the temperate regions. The Hump-backed and the Fin-backed Whales are those which most abound in the neighbourhood of the Antarctic Circle ; but these, unfortunately, are of little value either for oil or whalebone, so that their capture would by no means compensate for the great danger incurred by whalers in navigating those treacherous seas. Dumont d'Urville, on returning from his voyage of discovery within the Antarctic Circle, aroused the enthusiasm of the whalers by his glowing account of the number and size of the cetaceans he had encountered. Their joy, however, was turned into comparative disappointment on learning that they were for the most part hump-backs and fin-backs. Sir J. Ross, during his voyages, came upon great numbers of the same whales, as well as many of the more valuable smooth-backs and sperms. These had evidently not been previ-



ously disturbed by the inroads of man, as in some places they were excessively numerous, of large size, and so tame that "our ships sailing close past them did not seem to disturb them." On another fishing-ground which he discovered the whales were so tame that they allowed the ships almost to touch them before they would get out of the way.

This want of fear in the presence of man seems characteristic of most animals when first brought into contact with the "lords of creation." Thus when Darwin, during the voyage of the *Beagle*, penetrated into the interior of one of the Galapagos Islands, where in all probability human foot had never before been planted, he found that even the rapacious birds—the wildest of all the feathered tribes—were so unsophisticated as to allow him to knock them off the branches of trees with the end of his gun; and one of the Southern gannets owes its common name of "booby" to the apparently stupid way in which it allowed itself to be taken and slaughtered by the earliest human visitors to its haunts. As Sir James Ross stood watching the gambols of those whales, whose ignorance (of man) was bliss, visions of prosperous fisheries—never destined, however, to be realized—rose before him. "Hitherto beyond reach of their persecutors, they have enjoyed," he says, "a life of tranquillity and security, but will now, no doubt, be made to contribute to the wealth of our country in exact proportion to the energy and perseverance of our merchants."

Seals of several species are found in great numbers throughout the Southern Seas, generally in the neighbour-

hood of the numerous volcanic islands which rise here and there to the surface, and which form stations for the prosecution of the seal-fisheries. For many years after their establishment the destruction of seal life was enormous, with the usual effect of well-nigh exterminating those species that were most valued, whether for their fur or their blubber. Kerguelen Island, when first discovered, swarmed with these amphibious creatures, and no sooner was this known than its shores became a favourite cruising-ground for the sealers.

As might be expected from men engaged in so hazardous an enterprise, the fishery has all along been carried on without regard to future comers. Their only desire is to make as much as possible in the shortest possible time; consequently they kill all the seals that fall in their way, whether young or old. On many of those islands parties of sealers are left by the cruisers, and remain there for years together, their duty being to trap the seals, and to collect the fur and blubber, to be taken up by the ships which pay regular visits to all the stations and bring stores for the men. A more miserable life than that led by those seal-hunters could not well be imagined. Ross describes one of those parties, whom he visited on an island where the sea had been so tempestuous that for five weeks they had been unable to launch a boat. Although Englishmen, they looked more like Eskimos, being filthier in their dress and persons than any he had ever seen before. Their clothes were literally soaked in oil, and smelt most offensively; they wore boots of penguin-skin with the feathers turned inward. Another party was met with on the largest of

the Heard Islands by those on board the *Challenger* during her cruise round the world, and Lieutenant Spry has put on record his opinion of the place and of its human occupants. All the places previously visited, however inhospitable, seemed to him paradise compared with those wretched mountains of ice rising from a base of black lava cinder. The island was said to possess a mountain seven thousand feet high, but this the explorers could not verify, as the top was never free from cloud and mist, while glaciers descended on all sides to the sea. The party of sealers was found living in a couple of dirty huts, sunk into the ground for warmth and protection from the almost always violent winds. "There are," he says, "some forty or fifty men distributed about the island in small detachments, each party having a defined beat, where they watch for the sea-elephants coming on shore. What a miserable affair a sealer's life must be, hard and monotonous living in those desolate regions, completely isolated from the world! Here they remain for three years at a time, when, if they are lucky, they return home with perhaps £50 or £60 in their pockets. This is probably spent in a couple of months, and they again return to their voluntary exile, and live on penguins, young albatrosses, and sea-birds' eggs for another period."

Left on such inhospitable shores, they are greatly at the mercy of the sealing captains, who may omit to call at one or other of the numerous stations with their yearly stores. Thus abandoned, their only hope of escape lies in their being able to attract the attention of some passing ship—by no means a common occurrence in these seas. In this

way Dumont d'Urville, the French navigator, rescued an Englishman who had been left on an island station, and had either been forgotten or wilfully abandoned. He had fallen into the hands of the Fuegians, who were too poor almost to preserve life in themselves, but who, so far as their ability went, treated the castaway with great kindness. The *Challenger* in her cruise rescued from Inaccessible Island two Germans,—the brothers Stoltenhoff,—who had been on the island from November 1871 to October 1873. They had been landed there at their own desire by a whaling captain, who had assured them of the desirableness of the locality as the centre of the seal-fishery, and as possessing a soil of considerable fertility, although totally uninhabited. They had brought with them a large variety of household goods, as well as of such provisions as they could not themselves produce; and nothing daunted as they saw their connection with the outer world cut off by the departure, fifteen minutes after landing them, of the whaler, they set about the building of a hut for themselves on a piece of low-lying sheltered ground close to the shore, and cleared a space for a garden, in which they planted potatoes and other vegetables. They then turned their attention to sealing operations, and succeeded in killing nineteen fur-seals, the skins of which they prepared, although they failed to make any considerable quantity of oil.

The ground on which these modern Crusoes had pitched their habitation was separated from the rest of the island by high cliffs, which could only be surmounted by means of the long tussock grass which grew on their precipitous sides. Up this one and sometimes both of the

brothers went occasionally, in order to obtain a store of provisions ; for on the plateau above were a few wild goats, the descendants of some tame ones that had been left there to breed, and a large number of pigs similarly derived that now roamed about wild. The flesh of the goats they found particularly delicate, but that of the hogs, probably owing to their feeding chiefly on sea-birds, was rank and coarse. The latter, however, were highly valued by the brothers for the abundant supply of lard which their bodies yielded, and with which they fried their potatoes. When a pig was killed on the plateau, the fat, rolled in the hide and secured with thongs of skin, was thrown along with the hams over the cliff to one of the brothers below, who ran the lard into a cask.

The communication between the hut and the top of the cliff, difficult at all times, became doubly so after the accidental burning of the tussock grass, which had hitherto formed their only ladder. Deprived of this, and their only boat having gone to pieces in the surf, the sole means left of reaching their hunting-grounds, and so replenishing their food stores, was by swimming round the eastern headland. This they did more than once at the risk of their lives, the one brother carrying blankets, rifle, and a spare suit of clothes ; the other, powder, matches, and a kettle. In winter this feat could not be attempted, and during that season they suffered considerably for want of food, finding themselves, after nine months' residence on their island home, "little better than skeletons." Relief, however, came to them soon after in the appearance of immense flocks of penguins, which annually visit the island to breed. Although

the flesh of these birds is far from savoury, it formed a welcome addition to the slender stores of the Stoltenhoffs, and this was agreeably supplemented when the females soon after began to deposit their eggs. These proved as delicious as they certainly were nutritious, and so restored the brothers after their lengthened privation, that although they had an opportunity shortly after of leaving the island by means of a French barque which called at their station, they elected to stay where they were. They passed another winter on the island; but having prepared themselves for it by storing up a greater quantity of provisions than before, they seem to have suffered less than during the previous season. The island was occasionally visited by parties of sealers from the neighbouring island of Tristan; but the Tristans avoided the German brothers, and by degrees killed off all the goats, actuated, according to the Stoltenhoffs, by the desire to drive them from the island, and so secure all the seals to themselves. In this they at length succeeded. After the departure of the French barque they had no further communication with the outside world till the arrival of the *Challenger*, when their original stores being all exhausted, with the single exception of their only medicine, Epsom salts, which had been untouched, neither of the brothers having had an hour's sickness during their lengthened sojourn, they gladly accepted the offer to accompany that vessel to the Cape, where they were landed.

To return, however, to Antarctic waters, from which we have strayed some distance in following the fortunes of the *seal-hunters*—one of the commonest and most highly valued

of the Southern seals is that known as the Sea-Elephant, so called from the peculiar elongation of its nostrils, which hang loosely down when the animal is in repose, but which stiffen into a proboscis nearly a foot in length when the animal is enraged. It resembles the elephant also in the extreme tenderness of its trunk-like snout, a blow on this sensitive organ being sufficient to render it *hors de combat*. It is a huge creature, attaining a length of from twenty to thirty feet, and has a most formidable appearance, which contrasts strongly with its utter defencelessness. Its hide and blubber render it a valuable prize, and there is reason to fear that the persistency with which it is pursued in season and out of season throughout the waters of the Southern Ocean will lead ere long to its extermination.

The waters of the Antarctic Ocean abound in aquatic birds of all kinds,—penguins, gulls, cormorants, ducks, and sheath-bills, most of which live on the ocean, except during the breeding-season, when they visit the numerous islands, whose desolate shores are thus for a season enlivened by their cheerful, if somewhat discordant, notes. Of all the South Polar birds the Penguins are the most striking and characteristic, as they are entirely confined to those regions, where they take the place of the auks of the Northern Seas. They are curious birds, standing, in the largest species, nearly three feet high, and having their feet placed so far back that when standing on the ground their bodies are quite upright. They are not well adapted for walking on the ground, having, especially when climbing, to make use of their wings as an additional pair of legs, and in this

position they have often been mistaken for quadrupeds. Nor are they like most other birds adapted for flight, their



PENGUINS.

wings being short and thick, and covered over with stiff, scale-like feathers, which give them the appearance and enable them to perform the functions of the fins of a fish or the flippers of a seal. The penguin is only at home on the water, and there it astonishes all who see it by the rapidity and grace of its movements. According to Sir Wyville Thomson, the "rock-hoppers," as the penguins are called by the sealers, have a

constant habit of closing together the legs and tail straight out, laying the wings flat to the sides, arching forward

the neck, and by a powerful muscular action springing forward right out of the water. They run along in this way like a school of porpoises, and when thus at play they bear a marked resemblance to a shoal of fish pursued by enemies. Darwin, who often watched them when on board the *Beagle* as they came up to breathe, states that they came to the surface with such a spring, and dived again so instantaneously, that it would have defied any one at first sight to be sure that these were not fishes leaping out of the water in sport. In the water they are usually silent, only now and again emitting a prolonged croak, bearing, it is said, a striking resemblance to the human voice, and having a strangely weird effect when heard at night, when all other sounds are hushed.

Much information regarding the habits and general economy of these birds was obtained during the cruise of the *Challenger*. A species of crested penguin had its rookery, or nesting-place, on Inaccessible Island, situated among the long tussock grass, of which their nests were also built. A long distance off the sound of the birds, like the barking of a myriad of dogs, could be heard, and great bands of penguins could be observed going between the rookery and the sea. "All at once," says Sir Wyville Thomson, "out at sea, a hundred yards or so from the shore, the water is seen in motion, a dark red beak and sometimes a pair of eyes appearing now and then for a moment above the surface. The moving water approaches the shore in a wedge shape, and with great rapidity a band of perhaps from three to four hundred penguins scramble out upon the stones, at once exchanging the vigorous and

graceful movements and attitudes for which they are so remarkable while in the water for helpless and ungainly ones, tumbling over the stones and apparently with difficulty assuming their normal position upright on their feet, and with their fin-like wings hanging in a useless kind of way at their sides." While these birds are drying and dressing themselves on the shore, and preparing to ascend the scrub to the rookery, another party is seen making its way down the narrow penguin streets to the shore, where, after a considerable amount of what is known as "talking," they scuttle into the water, and move quickly out to sea.

The male birds arrive about two weeks earlier than the females, during which they are busy preparing the nests for their partners, who shortly after their arrival lay two and sometimes, though rarely, three bluish eggs, as large as those of the turkey. These she sits upon in an almost upright position, supported by her feet and the short stiff feathers of her wedge-like tail, and assisted in this work by her partner, whose chief work, however, is to find food for his mate. The young are hatched in six weeks, and they are fed by both parents, one or other of which is constantly at sea catching fish for their young, which are fed from the parents' crop. After the moulting season, both young and old take their departure for the ocean. This usually happens in a single night, the rookery being all alive in the evening, and in the morning not a single penguin is to be seen.

The largest species is that known as Forster's Penguin, the first specimens of which were brought home by Sir James Ross, who, in his interesting account of the voyage

of the *Erebus* and the *Terror*, gives some curious details regarding it. It feeds on crabs and other crustaceans, and attains an enormous size, weighing from sixty to seventy-five pounds. In its stomach are usually found from two to ten pounds weight of pebbles, consisting of granite, quartz, and trappean rocks,—indeed, the geologists of the expedition obtained their best specimens of the rocks of many of the ice-covered islands from the stomachs of these birds, who had swallowed them with the view of assisting the process of digestion. The great penguins, according to Ross, are stupid birds, allowing themselves to be approached so near as to be struck on the head with a bludgeon. Sometimes when pushed off the ice into the water, they would immediately leap upon it again as if to attack, although possessing neither offensive nor defensive weapons. Although awkward and slow in their movements on land, they seem to be more at home amidst ice and snow. Its capture afforded great amusement to those on board the *Erebus*; for when endeavouring to escape, it could make its way over the deep snow quicker than the sailors could follow it. This it did by lying on its belly and propelling itself by its powerful feet, sliding along upon the surface at a great pace, steadying itself by extending its fin-like wings, which alternately touch the ground on the side opposite to the propelling leg.

This largest of the penguin tribe did not occur in great numbers. It was very different, however, with a smaller species found on Possession Island,—a desolate ice-covered land, which Ross took possession of in the name of the Queen. There, as he relates, myriads of penguins covered

the whole surface of the island, along the ledges of the precipices, and to the summits of the hills. They were the sole inhabitants of the place ; and they do not appear to have submitted without a struggle to the annexation of their territory to that of the British Empire. "They attacked us vigorously," says Ross, "as we waded through their ranks, and pecked at us with their bills, disputing possession."

Petrels, both large and small, are often met with in large numbers throughout these seas. Seldom, indeed, can any bird have been seen in such numbers as was a small petrel observed by the navigator already mentioned. From the length of time which it took for one of the flocks to pass overhead, he estimated that it must have been from six to ten miles in length, and from two to three miles broad ; while so closely were the birds packed together, that they literally darkened the sky during the two or three hours they took to pass. The species of petrels differ greatly in size, from the stormy petrel, not larger than a sparrow, to the gigantic petrel, as large as a goose. One of the latter was wounded by an officer on board an exploring vessel, but it fell at too great a distance from the ship to be picked up. No sooner had it fallen, than it was seen to be attacked by two of its own kind and torn to pieces. The large petrels form their nests in burrows, closely resembling those of rabbits, which they scoop out for themselves, and the ground in the islands frequented by these birds is thus completely honeycombed. When the young are hatched, the constant chirping both of old and young is rendered somewhat

startling at first as it arises everywhere beneath one's feet.

While the shores which border on the Arctic Seas are peopled more or less thickly by native races, the islands which stud the Antarctic Ocean in corresponding latitudes are either uninhabited or are occupied only by a handful of sealers, who are constantly moving from one place to another. In none is there a native population, and we have to go considerably north of the Antarctic Circle before meeting with the most southerly of native races. These are the inhabitants of Tierra del Fuego, who, although much further removed from the South Pole than are the Eskimos from the North, yet seem to suffer greater privations, and to have a greater struggle for existence, than have their Northern brethren. A more degraded race of human beings than the Fuegians probably does not exist anywhere. They are short in stature, ill-proportioned and ill-favoured, going about almost naked, although the mountain-sides are covered with perpetual snow, while snow and sleet occur at all seasons. That the climate in those Southern regions is much severer than in corresponding latitudes in the north is well seen in the case of Sandwich Land, a little to the south of Tierra del Fuego, but in the latitude of the northern part of Scotland, which in the hottest month of the year is covered many fathoms thick with everlasting snow. Darwin, when visiting the Fuegians, states that he has seen the snow melting as it fell thickly on their naked bodies. As with the Eskimos, fire does not appear to be necessary to the bodily comfort of these savages, being chiefly used by

without religion in any form. Some of them, however, according to Admiral Fitzroy, believe in the existence of a 'great black man' inhabiting the depths of the forest, 'who cannot be escaped, and who influences the weather according to men's conduct.' "

And now I have surveyed the principal countries included within the Frigid Zone—the various lands which make up what is called the Polar World. I have glanced at the customs and manners of the more important races inhabiting them; have briefly sketched the features of their scenery, and have dwelt on their leading types of animal life. On earth, the bear, the reindeer, the fox, the Eskimo dog; in the sea, the whale, the seal, the porpoise, the walrus, the narwhal; in the air, those myriads of ocean-fowl and birds of game,—ducks, geese, swans, curlews, plovers, and the like,—which resort to the icy recesses of the North for their breeding-places. The picture I have drawn is one of no great variety, but at least it cannot be described as deficient in interest.

THE END.

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